



NetworkWorld

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June 6, 2005 ■ Volume 22, Number 22

NetworkLife

Bit buckets:

The ultimate storage strategy guide for fast evolving home networks.



Supplement starts after page 16.

Companies rush to plug 'data leaks'

■ BY ELLEN MESSMER

The threat entails employees leaking sensitive data about customers, finances or intellectual property in violation of security policies and regulatory requirements. Sometimes it's by mistake and sometimes the employee is looking to make a financial gain.

To combat data leakage, a growing number of vendors are pitching products designed to monitor sensitive information and block outgoing e-mails or instant messages containing it. This week alone, newcomer Fidelis Security Systems will debut, veteran player Vidius will change its name and launch a product, and Tablus will reveal plans to deliver a product that combines network- and desktop-based monitoring

See Data leakage, page 60

Experts fear RFID strain on networks

■ BY JOHN COX

Network equipment vendors and industry watchers are sounding the alarm that RFID threatens to overwhelm enterprise networks with operational demands.

Addressing the issue are big-name companies such as Cisco and start-ups such as Reva Systems, which later this summer plans to unveil a network appliance designed to provision large-scale RFID networks and integrate them with back-end management and security resources and enterprise applications.

The problem is not the volume

of traffic that RFID networks create. Rather, it is the sheer number of tags and tag readers that are anticipated. The current RFID approach can't scale to handle those numbers.

"Without an architecture for RFID, large-scale deployments are not possible," says David Passmore, research director for Burton Group. "At the reader level, in dense deployments you have to worry about RF interference, channel assignments and all that RF stuff. Most people don't have the tools and training to do that on their own."

See RFID, page 59

■ Sun spends big to shore up storage biz. Page 10. ■ Ethernet expected to steal show at Supercomm. Page 14.

A Wider Net

Internet security . . . writ very small

Miniature version of the 'Net used to assess security schemes.

■ BY ELLEN MESSMER

Like a ship in a bottle, the Internet-Simulation Event and Attack Generation Environment is a miniature version of the real thing: It's the vast Internet shrunk to fit onto a high-speed LAN on the floor of a building in a research park adjacent to the Iowa State University campus in Ames.

Iseage (pronounced "ice age") lets you model an attack on your network without having to put your real one on the line.

"It's a test bed for information warfare,"

See Miniature, page 16



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Toshihiko Suda

Senior Manager, Nissan Motor Company, Ltd.

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An upgrade to Microsoft Windows Server System made it possible for 50,000 worldwide employees at Nissan Motor Company to have more secure remote access to their e-mail and calendars from any Internet connection, without the hassle and expense of a VPN. Here's how: By deploying Windows Server 2003 and Exchange 2003, not only did Nissan IT meet the CEO's demand for better global collaboration, they expect to save at least \$135 million by streamlining their messaging infrastructure. To get the full Nissan story or find a Microsoft Certified Partner, go to microsoft.com/wssystem



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News

- **9 Qwest** seen having eyes for XO.
- **9 Verizon** extending switched Ethernet service.
- **10 Sun** nabs **StorageTek** in blockbuster.
- **10 Microsoft** seeks to sync up software.
- **12 HP** set for management barrage.
- **12 Juniper** adds IPSec to its SSL platform.
- **14 Supercomm** looks to build on telecom momentum.
- **14 MCI** offers network protection service.
- **59** Vendors widen **vulnerability management**.
- **60** Gaining speed, **Citrix** buys **NetScaler**.

Net Infrastructure

- **19 3Com** quarantines malicious traffic.
- **19 IronPort** aims high with e-mail security appliance.
- **20 Aruba** corrals foreign wireless LAN clients.
- **20 Kevin Tolly:** Broadband service providers keeping secrets?

Enterprise Computing

- **23 Study:** Networks to get their fill of iSCSI.
- **23 IBM** scales up Xeon server.

Application Services

- **25 Fireman's Fund** lights up apps.
- **25 Microsoft** to unveil collaboration wares.
- **26 Scott Bradner:** 'Death of Microsoft,' compressed GIF at 11.

Service Providers

- **29 AT&T's** security head wears many hats.
- **30 Special Focus:** Business market stoked for Ethernet services.
- **31 Johna Till Johnson:** Rethinking legal privacy framework: A call to arms.

The Net-Box got high marks for its ability to let users host their own Web sites and e-mail servers but low marks for its half-cooked applications. Page 34.

■ **CONTACT US** Network World, 118 Turnpike Road, Southborough, MA 01772; Phone: (508) 460-3333; Fax: (508) 490-6438; E-mail: nwnews@nww.com; **STAFF:** See the masthead on page 16 for more contact information. **REPRINTS:** (717) 399-1900

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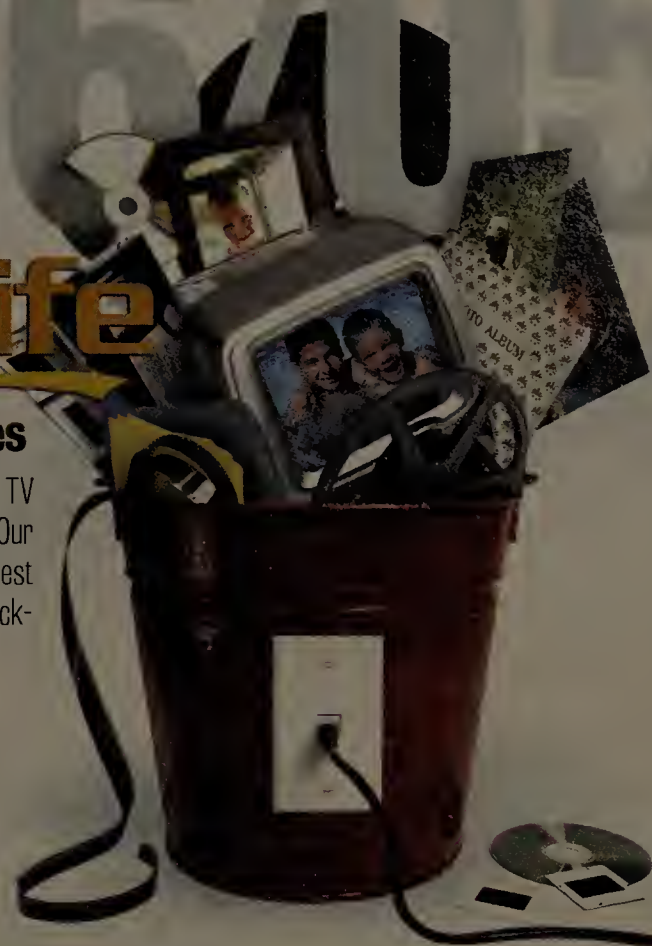
Home network storage strategies

Your music collection, home movies, photo album and even TV shows are being digitized and stored on home networks. Our *Network Life* experts will provide you with advice on the best ways to get all of your digital life bits into the proper buckets. Supplement after **page 16**.

Features

Data center makeover:

Six experts offer their advice for redesigning the data center at a hypothetical company with real problems. **Page 38.**



Online: www.networkworld.com

Breaking News

Go online for breaking news every day. **DocFinder: 1001**

Exclusive

Moving to Mac: A one-month review

Columnist Winn Schwartau switched to a Mac one month ago after having it with WinTel security. Check out his review of his first month as a Mac user in his Security Awareness blog. **DocFinder: 7443**

Peeking into Juniper's future

Listen to CEO Scott Kriens talk about the company's enterprise net strategy, its plans for gaining share in enterprise routing, why a Cisco customer would want to jump ship to Juniper and more in our 25-minute audio interview. **DocFinder: 7444**

Network World Radio: Apple's Mac OS X 10.4

This week we turn our attention to the latest release of the Macintosh operating system, Mac OS X 10.4 — or Tiger — which was released about a month ago. Joining the program is Gordon Haff, senior analyst at Illuminata in Nashua, N.H. **DocFinder: 7445**

Network Life: Spotlight on home storage

Get tips and suggestions on the best ways to provide your home network clients (friends, family and neighbors) the storage and back-up protection they'll need to keep them (and you) a happy network citizen. We offer advice on PC recycling/repurposing, ways to stream media around your house, tests and much more. **DocFinder: 7446**

Seminars and Events

VoIP: Capitalizing on convergence

A Technology Tour and Expo packed with real-world data and case studies from leading companies and front-line colleagues who've successfully deployed converged infrastructures. The average savings of these early adopters: \$500,000. Want in? Qualify and you can attend free. **DocFinder: 7451**

Online help and advice

Nutter's Help Desk

Firewalls and worms

Help Desk guru Ron Nutter offers suggestions to a reader who asks: "We have a firewall, but have never updated its software, thinking that worms/viruses were better addressed by our anti-virus software. How would we update these devices, and how often do you recommend we do so?" **DocFinder: 7447**

Home Base

Power point

Columnist Sandra Gittlen offers power-outage preparation tips. **DocFinder: 7448**

Compendium

Googlebombing your way to a good reputation
NetworkWorld.com Executive Editor Adam Gaffin looks at how some companies use search engine optimization gone bad to ensure sites favorable to it show up higher on Google results pages. **DocFinder: 7449**

Small Business Tech

New e-mail server option

Columnist James Gaskin considers changing his view on e-mail self-hosting. **DocFinder: 7450**

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Technology Update

- **33 SMI-S 1.1** simplifies storage management.
- **33 Steve Blass:** Ask Dr. Internet.
- **34 Mark Gibbs:** Neat gadgets and Linux clusters.
- **34 Keith Shaw:** Net-Box is ambitious, but audience is unclear.

Opinions

- **36 On Technology:** Carr's latest effort to stir the IT pot.
- **37 Chris Shipley:** Your reputation precedes you.
- **37 Daniel Briere:** Defending the castle.
- **62 BackSpin:** Death to manuals.
- **62 'Net Buzz:** Company's strategy change marks end of poetic license.

Management Strategies

- **51** Dos and don'ts of an IT org. chart.



New

Cisco, Yahoo team up vs. spam

■ Yahoo and Cisco last week announced they are combining their anti-spam technologies to create a new e-mail authentication system. Called DomainKeys Identified Mail, it will draw on Yahoo's DomainKeys authentication technology and Cisco's Internet Identified Mail. The technology will be offered to other vendors on a royalty-free basis, the companies said. Yahoo's DomainKeys uses public-key cryptography to authenticate a sender of an e-mail at the domain level. The sending system generates a signature and inserts it in the e-mail header, and the receiving system verifies the signature using a public key published in the DNS. Cisco's authentication technology also uses cryptography but associates the signature with the message itself.

Microsoft touting XML in Office 12

■ Microsoft last week said that XML would be the default file format for three applications when it ships Office 12 late next year. The company said its new Microsoft Office Open XML Formats would be supported in Word, Excel and PowerPoint. Those three applications will have new file extensions that end with an 'x' to designate they are XML-based: .docx, .xlsx and .pptx. The big picture for end users is that Microsoft is trying to take the shackles off its desktop Office applications and use XML to open the data created within those applications to back-end systems, such as enterprise resource planning and customer relationship management applications, and to inject the data into business process workflows. The XML file formats are the first announced changes related to "The New World of Work" strategy that Microsoft Chief Software Architect Bill Gates laid out last month at his annual CEO Summit.

Intel to demo WiMAX technology

■ Intel is expected to show off a prototype for the guts of a WiMAX base station this week at Supercomm in Chicago, aiming to help equipment vendors get started making gear for the high-speed wireless standard. The Glenfield reference design is Intel's first for network infrastructure for WiMAX, a technology strongly backed by Intel that is expected to start hitting the market by year-end. The board is built around an Intel network processor for media access control functions and a PicoChip Designs physical-layer component. It can be customized by base-station vendors to meet their needs, according to Intel. Glenfield was built using Advanced Telecom Computing Architecture (ATCA), which Intel has aggressively promoted as a design standard for network equipment. Intel sees ATCA taking carrier gear beyond the usually proprietary architectures of today to modular systems that can be developed more quickly and at lower cost using components from many manufacturers. (See related Supercomm story, page 14.)

COMPENDIUM

E-mail at birth

The Malaysian state of Perak has proposed automatically giving newborns an e-mail address along with a birth certificate as part of a five-year communications and technology strategic plan. No word on whether each kid also will get a My First Computer. *Compendium is a must-read right from birth at www.networkworld.com. DocFinder: 7442.*

■ The Good The Bad The Ugly



Grid news for animals. Colorado State University last week said it is piloting a national animal identification system based on grid computing technology. The project is the first to exploit the school's new Colorado Grid Computing Initiative, which is funded through more than \$2 million in grants and other monies. One example of how the ID system might be used: for tracking cattle, which then could be quickly identified in the case of a disease outbreak.



Quantum leap . . . backwards?

NEC last week said it has delayed the introduction of its first quantum cryptography system by three to four years because of performance and cost issues. NEC had planned to start selling the system later this year. Quantum cryptography is supposed to improve the security of data communications by encoding each bit of the encryption key on individual photons.



Another reason to hate spam. Spam may be a global problem but it's hurting 'Net users in developing countries more than their counterparts in industrialized nations, according to a new report by the Organization for Economic Cooperation and Development. "[Spam] is a heavy drain on resources that are scarcer and costlier in developing countries than elsewhere," the report states. ▼



McAfee snaps up Wireless Security

■ McAfee last week acquired start-up Wireless Security for an undisclosed sum, with the intent of offering wireless security services in the future. McAfee said it plans to integrate Wireless Security's wireless LAN authentication and encryption technologies into McAfee software in order to provide a remotely managed security service for consumers and small businesses via the same network operations centers where McAfee currently provides managed anti-virus services.

German passports to hold RFID chip

■ Germany has taken a big step in the battle against organized crime and terrorism by unveiling a new passport with a chip that contains biometric data. The country plans to be among the first in Europe to issue biometric passes, starting Nov. 1. The new passport, valid for 10 years, will include an embedded radio frequency identification (RFID) chip that will initially store a digital photo of the passport holder's face.

Starting in March 2007, the holder's left and right index fingerprints also will be stored on the chip. The reasons for using non-contact RFID chips are twofold: contact points in traditional chip cards are not designed for 10 years of use; and passports don't fit in present chip-card readers, according to Germany's Federal Office for Information Security.



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State IT execs betting on VoIP

By Tom Ichniowski
A number of state IT executives are betting on VoIP as the future of voice communications. In a survey of 100 state IT executives, 60% said they plan to implement VoIP within the next 12 months. The survey also found that 70% of state IT executives plan to implement VoIP within the next 24 months. The survey was conducted by NetworkWorld and the State of Texas.

Is security ripe for outsourcing?

By Tom Ichniowski
As the threat of cyberattacks grows, many organizations are looking for ways to outsource their security. A survey of 100 IT executives found that 60% plan to outsource their security within the next 12 months. The survey also found that 70% of IT executives plan to outsource their security within the next 24 months. The survey was conducted by NetworkWorld and the State of Texas.

Colleges cram for test of new security plans

By Tom Ichniowski
As the threat of cyberattacks grows, many colleges are looking for ways to outsource their security. A survey of 100 college IT executives found that 60% plan to outsource their security within the next 12 months. The survey also found that 70% of college IT executives plan to outsource their security within the next 24 months. The survey was conducted by NetworkWorld and the State of Texas.

Keeping track of NASCAR

By Tom Ichniowski
As the threat of cyberattacks grows, many NASCAR teams are looking for ways to outsource their security. A survey of 100 NASCAR team IT executives found that 60% plan to outsource their security within the next 12 months. The survey also found that 70% of NASCAR team IT executives plan to outsource their security within the next 24 months. The survey was conducted by NetworkWorld and the State of Texas.

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Qwest seen having eyes for XO

Source says RBOC sizing up smaller carrier in wake of MCI snub.

■ BY CAROLYN DUFFY MARSAN
AND JIM DUFFY

Qwest is reportedly sizing up XO Communications as a possible takeover target, a source says.

Speculation that Qwest might pursue XO and other, smaller service providers surfaced after Qwest lost out to Verizon in its bid for MCI. Observers at that time said Qwest might look to acquire a smaller carrier with nationwide facilities, a focus on enterprise customers and little debt — such as one that has emerged from Chapter 11 bankruptcy. XO, Global Crossing and Broadwing have done so.

A source says Qwest was performing due diligence on XO last week as a precursor to perhaps making an offer for the carrier. Qwest and XO declined to comment on “rumor and speculation.”

Analysts say the union makes sense. Qwest CEO Dick Notebaert has said the carrier would be looking to accumulate smaller assets after losing out on MCI, including those divested by SBC and Verizon as they integrate acquired carriers AT&T and MCI,

respectively.

“Qwest has been saying that they would look to collect similar local assets and business customers by buying smaller companies,” says Donna Jaegers, an analyst at Janco Partners. “It makes sense. XO’s got fiber in 37 markets — they have about 3,000 buildings on fiber. They have a lot of collocation facilities with the local phone companies, and they got that by buying Allegiance [Telecom].”

XO last year outbid Qwest for Allegiance. XO has 1.16 million metropolitan fiber miles throughout 40 major U.S. cities, including the 30 largest.

“It’s very consistent with what [Notebaert] said,” says Jeffrey Halpern of Sanford Bernstein, which hosted a conference last week at which Notebaert spoke and reiterated plans to “roll up” smaller assets.

“He has two problems: He has a scale problem and he has an access problem,” he says. “What he said during and following his presentation was that he believes consolidation remains necessary and that Qwest is likely to be an

■ PROFILE: XO Communications

Location: Reston, Va.

Employees: 5,000

Management: Carl Grivner, president and CEO

Services: Local and long-distance voice, Internet access, private data (private line and Ethernet), hosting, managed firewall, VPN and bundled.

Network: 16,000 fiber mile OC-192 IP backbone; 1.16 million metro fiber miles in 40 cities.

Fast facts: The company was formed in 1994 and was formerly known as Nextlink Communications. It changed its name to XO Communications in 2000. It emerged from bankruptcy in 2003.

active member in driving that; and that the probable strategy is a roll-up strategy — there isn’t one acquisition that solves the problem. You could assemble a set of assets that could be competitive with an AT&T and an MCI in the enterprise space.”

Thomas Nolle, president of consultancy CIMI, says he has heard the Qwest/XO due diligence reports, as well.

“It kind of makes sense,” he says. “The near-term strategy for them is probably to try to build up their mass and credibility so that it at

least looks like they’re trying to be an independent player.”

And of the rumored Qwest targets — XO, Global Crossing, Broadwing and Level 3 — “XO is a lower apple,” Nolle says.

“The only concern I have about XO is that I’m not sure they bring that much to the table. In addition to not having maybe a lot of extra breadth, Ethernet-type services — which is what XO’s been principally known for — isn’t exactly rocket science, and Qwest could deploy it on their own. So I’m not 100% sure what they think they’re

buying in the process. They’re just essentially picking up some customers, picking up some data sales expertise in some critical areas.”

In March, XO retained Jefferies & Co. to present strategic alternatives based on, among other things, the competitive environment of the telecom industry, the current regulatory environment, and the recent and pending mergers and acquisitions in the industry. XO says it is considering Jefferies’ report.

Calls to Jefferies were not returned by press time.

XO’s market capitalization is \$404 million. Revenue for the first quarter of this year, ended March 31, was \$361.5 million, an increase of 39% from the first quarter of last year. Consolidated net loss for the first quarter of this year was \$42.9 million, an improvement of \$5.6 million compared with a net loss of \$48.5 million in the same period last year.

In addition to its metropolitan fiber, XO has an OC-192 IP backbone with OC-12 uplinks in its markets and data centers. ■

Verizon extending switched Ethernet service

■ BY JIM DUFFY

Verizon this month plans to announce enhancements to its switched Ethernet service designed to make it more reliable for enterprise applications.

Verizon is expected to add class-of-service features to its switched Ethernet LAN and Ethernet virtual private line services, which are predominantly used for enterprise branch-office site-to-site communication. The service costs \$900 to \$1,000 per month for 10M bit/sec throughput, seven times the bandwidth of a 1.5M bit/sec, \$400- to \$500-per-month frame relay T-1, says Mike Tighe, Verizon product manager.

Verizon plans to offer three levels of class-of-service, all backed by stringent service-level agreements (SLA), for Ethernet LAN and Ethernet virtual private line:

- Standard, a best-effort service for e-mail and Internet surfing.
 - Priority, which offers throughput guarantees akin to frame relay committed information rate, for CRM and ERP applications.
 - Real-Time, for voice and video.
- For each class, Verizon is offering SLAs

on data delivery, latency and jitter (see graphic). Should Verizon not meet its SLA guarantees, preliminary information provided by the carrier states that it will offer users a 20% credit on the monthly recurring cost of the service.

Some analysts say adding class-of-service will enable Verizon to make up revenue on the low price-per-bit of Ethernet.

“What Verizon is trying to do is figure out exactly what combination of features and capabilities create an optimum Ethernet offering,” says Thomas Nolle, president of consultancy CIMI. “There’s a lot of interest in Ethernet right now among the enterprises, but it’s predicated on there being a conspicuous cost advantage relative to the current access technologies.” (See related story, page 30.)

Verizon could be the first incumbent carrier to offer Ethernet with three distinct classes of service. Among the RBOCs, BellSouth offers a premium Metro Ethernet service with guaranteed bandwidth minimums, bursting, virtual LAN stacking and SLAs. Qwest offers an ATM unspecified bit rate class-of-service for its LAN Switching Service, and 99.95% SLAs for its Metro Optical Ethernet offerings.

Among the interexchange carriers, AT&T guarantees network availability from 99.9% to 99.99%, depending on how it provisions each connection, for its Ethernet Switched Service metropolitan-area network. MCI offers 100% availability, latency under 55 millisecond and delivery of at least 99.5% of packets for its Internet Dedicated Ethernet service; and 100% network availability for on-net traffic and 99.8% for off-net traffic for its U.S. Private Line Ethernet and Metro Private Line Ethernet services.

Verizon plans a number of other significant enhancements to its Ethernet services and infrastructure over the next year.

Virtual Private LAN Services is slated for 2006, Tighe says. This technology would let

it offer Ethernet LAN on a national scale.

Verizon’s current inter-LATA Ethernet offering is National Transparent LAN Services, a point-to-point “Ethernet virtual circuit” service.

Verizon also is scheduled to provide SONET-level access to switched Ethernet services late this year or early next by adding IEEE 802.17 Resilient Packet Ring technology to its SONET rings. RPR will enable Verizon to extend Ethernet LAN into its Enhanced Dedicated SONET Ring service, Tighe says.

Resiliency will be augmented by offering a protected access line for switched Ethernet, which extends two fibers from an Ethernet switch into the customer’s premises. ■

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Sun nabs StorageTek in blockbuster

■ BY DENI CONNOR

Looking to stem losses and significantly boost its data protection, management and storage wares, Sun last week dug deep and acquired Storage Technology (StorageTek) for \$4.1 billion.

Sun blamed its StorEdge storage product line partly for weak financial results reported in April. Sun posted a net loss of \$61 million for the quarter ending March 27. Company executives said one problem was that the rate at which customers purchase Sun's storage products, along with servers, had dropped over the last three quarters. Sun competitors, such as IBM, have been selling storage devices with servers, but Sun has lagged in that market.

Though Sun created the Network File System (NFS) protocol

used in the network-attached storage market, it is widely recognized that the company has not matched the success of competitors IBM and HP at selling storage products with its server systems.

Meanwhile, StorageTek and Sun had a close relationship before the acquisition. StorageTek had a continuing OEM agreement with Sun, starting in 1999. Sun has been StorageTek's largest OEM partner, offering StorageTek libraries under Sun's StorEdge brand, according to StorageTek.

Sun CEO Scott McNealy says the acquisition might just be the beginning. "Sun's technical and financial strength puts us in a great position to act as a consolidator in the [IT] industry," he says. With StorageTek "we have an end-to-end capability" from the development, creation, cap-

The companies combined

Sun's acquisition of StorageTek will result in an expanded portfolio of data management and protection products.

	Sun	StorageTek
2004 revenue	\$11.2 billion	\$2.2 billion
2004 net income	\$651 million	\$191 million
Cash/short term investments	\$7.4 billion	\$4.5 billion
Employees	32,000	7,100
Products	Servers, disk storage, storage management software	Tape automation, disk storage, storage management and ILM software

ture, management, storage and archiving of data, he says.

Industry reaction

"It certainly fills out Sun's storage offerings — they will now be able to control tape library, as well as drive offerings," says

Randy Kerns, senior analyst for the Evaluator Group. StorageTek's tape products accounted for 77% of its revenue in 2004.

This acquisition also will give Sun a sales and support channel the company didn't have, analysts and users say. Through

the acquisition, Sun will acquire a more than 1,000-person sales force.

"Even though it is going to take Sun some time to rationalize all the storage products between the two companies, the most important thing it accomplishes for Sun is providing them with a sales and pre-sales technology force that can actually understand and can sell storage," says Stephanie Balaouras, senior analyst at The Yankee Group.

Gordon Haff, senior analyst for Illuminata, adds: "It seems as if Sun was trying to leverage their existing sales force to a large degree to sell storage. And it wasn't working. They've been adding storage specialists but it's hard to gain critical mass with onesy-twosy additions."

Ron Godine, manager of IS operations for Royal Appliance of Glenwillow, Ohio, says the deal will benefit him, particularly in light of Sun's past sales efforts.

"Some of Sun's storage has been faltering badly," Godine says. "Sun has always wanted to make an impact in storage, but they quite honestly need a sales force — that's one of the troubles we're getting into — we are only seeing mom and pop local places that do it all and none of it well in addressing enterprise-class customers."

"It's probably the right direction for Sun," Godine says. "The move is consistent in that it will make Sun more competitive with Dell, HP, who have strong server, storage and services strategies." While Godine has no StorageTek products, he has plenty of Sun servers.

Still, others say this wasn't the deal they expected Sun to make.

Chris Foster, a storage analyst at Technology Business Research, called the deal "a step backward" because Sun recently has been heading into the services market — while StorageTek is more of a legacy storage and back-up vendor.

"I expected Sun to make an acquisition in professional services or software, and I don't think StorageTek fits that profile. If they were going to spend \$4 billion, I thought they would have bought a software company," he says.

John Blau, a correspondent with the IDG News Service, contributed to this story.

Microsoft seeks to sync up software

New versions of SQL Server, Visual Studio to highlight TechEd conference.

■ BY JOHN FONTANA

Microsoft this week will use its annual TechEd conference to give IT executives a clearer picture on how it plans to integrate its developer tools and Windows infrastructure in hopes of supplying the uptime and security that corporations demand from their networks.

The focus of the conference will be SQL Server 2005 and Visual Studio 2005, which were supposed to ship more than a year ago. Microsoft is expected to announce that the two pieces of software will ship on Nov. 8.

SQL Server 2005 and Visual Studio 2005 are linked by many complementary features that will let IT build and support business-process applications.

Microsoft CEO Steve Ballmer, who will deliver the opening keynote address to an anticipated 11,000 attendees, also will introduce updates to Microsoft's Visual Studio Tools for Office. The tools let companies create document-centric applications using Word and Excel.

Both announcements highlight how Microsoft hopes to foster tighter bonds between those that maintain IT infrastructure and those that build applications that run on top of it.

"Microsoft is going to try and pull everything together with Visual Studio so it is the one tool that can be used, in theory, to easily develop for just about every Microsoft product you can imagine," says Joe Wilcox, an analyst with Jupiter Research. "This is a good opportunity for Microsoft to rally the troops as it marches toward its 2005 server milestones and its 2006

desktop milestones." Those desktop milestones are centered on Longhorn, which is expected to ship next year.

"Historically, we have talked about server and tool products to IT pros in somewhat of a siloed way," says Martin Taylor, general manager of platform strategy for Microsoft. "We left it up to them to figure out some of the benefits of integration, and so now we are trying to talk about the integrated scenarios." Those scenarios center on infrastructure, management, security and Web services.

Microsoft also will focus on other upcoming releases such as BizTalk Server 2006 and Commerce Server 2006, which along with SQL Server and Visual Studio are part of Microsoft's Connected Systems infrastructure.

"One thing that you do see from Microsoft these days is that they know they have challenges on many fronts," says Laura DiDio, an analyst with The Yankee Group. "They have challenges from Linux and other competitors in other areas. They have challenges from their own customer base because it is demanding more functionality, more reliability and higher security. I think you have to give them credit for stepping up to the plate, and they are starting to deliver."

At the conference, Microsoft is expected to ship the long-awaited Windows Server Updates Services (WSUS), a free enterprise server for downloading patches, and launch Microsoft Update, a Microsoft Web site that hosts patches for download.

Microsoft also plans to demonstrate a combination of WSUS, the System Management Server Inventory tool for Microsoft Update and the Microsoft Baseline Security Analyzer

(MBSA) 2.0, a scanning tool expected to ship in 30 days.

Microsoft will use the conference to clarify its product releases and road map since it is facing thousands of customers that will have to decide this year on re-signing billions of dollars' worth of Volume Licensing and Software Assurance contracts set to expire this year.

In addition to Microsoft, many of the 268 third-party partners attending the show will make announcements. Advanced Systems Concepts is set to release ActiveBatch Wireless, a Java application that allows for job scheduling and management from a BlackBerry device. Configuresoft is scheduled to release Enterprise Configuration Manager 4.7, which includes Unix and Linux support along with compliance, rollback and uninstall features. Ecora is expected to introduce its multi-platform Change and Configuration Management Suite, a combination of its Enterprise Auditor, Patch Manager and Provisioning Manager software. Shavlik Technologies is set to introduce three products: HFNetChkPro for Solaris, which was scheduled to ship June 1; NetChk Spyware, which is in beta; and Shavlik Security Agents 5. PatchLink is scheduled to announce integration of its PatchLink Update software with Microsoft's MBSA 2.0. ■



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Juniper adds IPSec to its SSL platform

■ BY TIM GREENE

Juniper is upgrading its remote access platform to support IPSec or SSL sessions, deciding on the fly which technology is better suited for the current connection.

This is the first time a remote access vendor has incorporated both IPSec and SSL transport in an agent that is downloaded to a remote machine at the time of connection. The agent overcomes the objection that IPSec requires a separately installed client on remote machines. Juniper says it first tries IPSec because that technology has less inherent delay than SSL and so provides better performance.

As remote users try to connect over the Internet to a Juniper SSL VPN box at the edge of a business network, the device sends down a dual agent. If the IPSec connection is blocked, as can occur across network devices that swap private IP addresses for public ones, the software will fall back to an SSL connection, which can generally get through these network address translation devices.

"This way you can have your choice of the better one to use, but the end user doesn't have to figure out which connection to make," says Zeus Kerravala, an analyst with The Yankee Group.

Nortel and other vendors have gateways that support SSL and IPSec but require a pre-installed client on remote machines for IPSec connections.

In addition, Juniper is adding XML rewrite capabilities to the platform to make it possible to reach applications with XML-based content.

The company is upgrading its host-checker software that scans remote computers before allowing them to connect to a VPN to make sure they meet security policies. If an end-user machine fails a policy, the software can specify to the user why the machine failed and redirect it to a site where the problem can be fixed. The host checker then re-evaluates the machine. Before, the software just told the end user where to go to download fixes. ■

HP to release mgmt. barrage

Company to unveil products in its OpenView and ProCurve lines.

■ BY DENISE DUBIE

HP this week is set to unveil products designed to help customers better manage compliance across their network infrastructure and monitor service-oriented applications from development to deployment.

HP will introduce two OpenView management software applications at its 15th annual user conference, the HP Software Forum, which the vendor co-hosts with independent user organization OpenView Forum International. HP expects some 1,750 OpenView users to attend, and industry watchers say the show offers HP the opportunity to pitch long-term strategies to customers who primarily use a few OpenView products.

"HP wants to help customers expand their use of existing OpenView technologies beyond the core offerings, and the company wants to attract new kinds of IT buyers, not just network managers," says Dennis Drogseth, a vice president at market research firm Enterprise Management Associates.

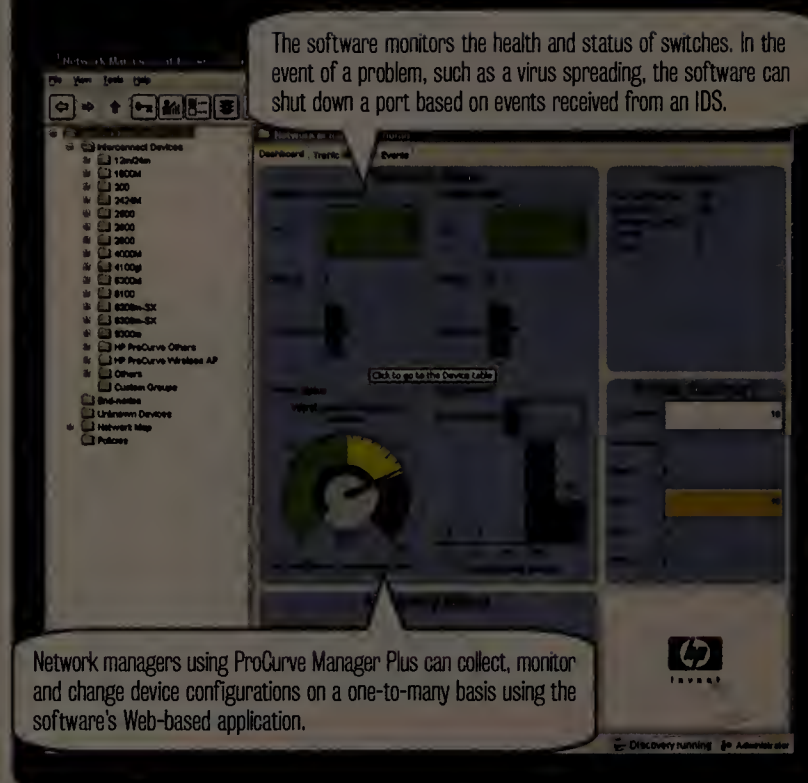
HP says its OpenView software brings in the majority of the revenue for the software division. HP last month reported second quarter software revenue at \$277 million, an increase of 23% over last year, with OpenView revenue increasing 36%. Yet the software division still reported an operating loss of \$6 million, compared with a loss of \$52 million in the same period last year. The company attributes that to costs associated with six acquisitions and their subsequent integration.

HP says OpenView products such as Network Node Manager, Operations and Service Desk account for most of the revenue, and the group is working to sell newer OpenView offerings, such as Automation Manager, into current accounts to become profitable by the fourth quarter.

The new applications, Compliance Manager and SOA Manager, might draw in a more executive-level buyer, which could help HP peddle its Adaptive Enterprise strategy into larger accounts. Adaptive Enterprise is HP's overarching plan to incorporate hardware, software and services, and integrate them to help customers quickly respond to changing

Switch surveillance

HP ProCurve Manager Plus 2.0 software helps customers keep tabs on their edge devices and take actions based on events collected from third-party systems.



resource needs.

The software applications could provide short-term benefits for large enterprise users, says Jasmine Noel, a principal analyst at Ptak, Noel & Associates. For example, the software would provide enterprise IT departments with a way to correlate preset policies — laid out in help desk and workflow products — to actual events captured in configuration files and monitoring tools. The product also reports the findings in non-technical terms for auditors.

"Compliance Manager links to a bunch of IT products to collect compliance-related data," she says.

Compliance Manager software installs on a server and uses data-mining technology borrowed from HP's OpenView Performance Insight Manager software to collect information from multiple servers, applications and third-party systems. The data collected is compared against preset policies, and Compliance Manager can take actions to correct non-compliant systems with a patch, for example, made possible by software distribution technology HP acquired last year.

SOA Manager uses a combination of server, distributed agent and integration platform software

to help application developers build management into Web services and SOA applications, and to enable IT operations staff to better monitor application performance once deployed, HP says. The software would help IT staff better map, or relate, business services to software assets in the SOA, says Jason Bloomberg, a senior analyst with ZapThink.

"SOA Manager could help IT managers get a complete picture of the application and provide an active management system from development to monitoring," he says.

Compliance Manager is expected to be generally available in September and pricing will tentatively start at \$250,000. SOA Manager costs \$10,000 per agent, \$22,000 per Web services management broker and \$25,000 per management integration platform.

Separately, HP's ProCurve Networking group this week plans to introduce a switch series, unveil upgrades to its switch management software and detail free updates to its ProCurve 5300xl switches and its ProCurve Wireless Access Point 420 series.

HP says its ProCurve Routing Switch 9400sl series will provide enterprise customers with the ability to roll out high perfor-

mance and high availability Gigabit and 10 Gigabit switches at a lower cost than competitors Cisco and Extreme Networks.

According to the Dell'Oro Group, based on port shipments, HP ranked No. 2 behind only Cisco in the worldwide modular Gigabit Ethernet switch market in the fourth quarter of 2004.

The 9400sl series provides 32 wirespeed 10 Gigabit ports, 32 10G Ethernet ports per chassis, 320 wirespeed gigabit ports, 480 gigabit ports per chassis and IPv6 support.

"HP is trying to sell a network, just like Cisco, so they need a diverse range of products to do that," says Jean Kaplan, an associate research analyst with IDC. "The 9400sl series is part of their initiative to help customers with large data files that create a lot of traffic get gigabit speeds to the desktop."

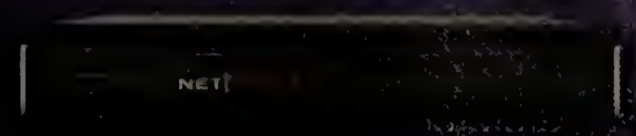
HP upgraded its ProCurve Manager 2.0 and ProCurve Manager Plus 2.0 software with a new user interface, automated update features and access security enhancements (see graphic). For example, the software now supports SNMPv3, Secure Shell and Radius authentication. ProCurve Manager ships with all HP ProCurve switches and lets users configure and manage switch settings from a Windows-based PC. ProCurve Manager Plus is an enhanced version that is purchased as an upgrade.

HP also will upgrade its 5300 series at no cost with automatic Internet Control Message Protocol throttling, which HP says reduces denial-of-service attacks from affecting network availability. HP's ProCurve Wireless Access Point 420 series also features new capabilities that support industry standards such as IEEE 802.11i, 802.1X Extensible Authentication Protocol and Wi-Fi Protected Access pre-802.11i implementation for backward compatibility.

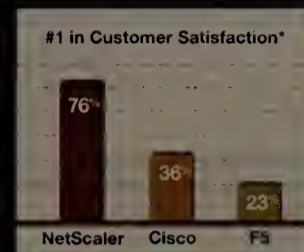
Pricing for the 9400sl series starts at \$310,000 and the products are expected to be available in August. ProCurve Manager 2.0 and ProCurve Manager Plus 2.0 are also expected later this summer. ProCurve Manager Plus 2.0 has a starting price of \$3,100. The no-cost software enhancements for the ProCurve 5300xl Switch series and Wireless Access Point 420 series are planned to be available soon. ■

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Supercomm looks to build on telecom momentum

■ BY JIM DUFFY AND TIM GREENE

Supercomm organizers this year hope to build on the telecom revival evident at last year's conference.

This year's show will see more significant announcements from key vendors — Cisco, Lucent, Juniper, Sun, Avici, Riverstone Networks and others — as well as important technology demonstrations intended to prove that next-generation services are ready for prime time.

Supercomm 2004 saw sharp hikes in attendance, exhibitors and exhibition space from 2003. Riding that momentum, this year's show will see exhibitor count and exhibition space up slightly from last year, while attendance is expected to be flat: 30,000 attendees set to peruse the offerings of 667 exhibitors — 67 more than last year — laid out on 309,000 square feet of real estate, up 9,000 from 2004.

On the enterprise business side, the white-hot service is Ethernet as a replacement for leased lines. For consumers, it's IPTV coming to a fiber near you as telcos and cable companies jockey for your remote.

Infonetics and IDC expect worldwide Ethernet services to grow at a compound annual rate better than 50% over the next four or five years. IDC says it will grow from \$3 billion in 2003 to \$19 billion in 2007; and Infonetics pegs growth to \$22 billion in 2009 from \$2.5 billion in 2004.

Ethernet also will be used to carry video into homes as IPTV. Telcos are embarking on multibillion-dollar fiber buildouts to carry high-speed interactive TV into homes. This will necessitate multimillion-dollar investments in Gigabit passive optical network equipment that is Ethernet friendly.

"The two are in many ways related," says Thomas Nolle, president of consultancy CIMI. "If the RBOCs could lower the cost of Ethernet substantially by taking advantage of the same infrastructure as is used for IPTV to get the economies of scale, then they could lower the price of Ethernet enough to make it really attractive and still earn as much profit on it as they would have on SONET."

Market tracker MRG says the number of IPTV subscribers will grow from 2 million in 2004 to 25 million in 2008. While those numbers are not staggering, the revenue opportunity they represent is more impressive: Subscriber revenue of \$635 million in 2004 will grow to \$7.2 billion in 2008, according to MRG.

Service providers are spending more overall this year, as well. North American service providers' capital expenditures are projected to increase 5% to \$61 billion in 2005, according to Infonetics Research.

Much of the spending is targeted at IP/MPLS routers and Ethernet switches for the Ethernet/IPTV opportunity. Vendors are responding accordingly.

Juniper, for example, plans to

introduce a router at Supercomm designed for high-density Ethernet aggregation to deliver multimedia broadband services, such as IPTV, to a large number of subscribers. Scaling from 100G to 320G bit/sec of capacity, the E320 supports up to 128,000 subscribers. Juniper also is rolling out a High-Density Ethernet (HDE) line module that provides eight ports of Gigabit Ethernet per slot and an "ATM plus Ethernet" line module designed to help ease migration from ATM access to next-generation Ethernet access networks.

Riverstone also is looking to assist service providers in migrating from ATM to Ethernet. The company is enhancing its 15008 Ethernet Edge Router with packet-over-SONET and ATM interfaces to let service providers extend Ethernet services over legacy networks, and vice versa.

The new modules include an eight-port PoS line card that supports multi-rate OC3c/12c/48c on any port, to a maximum capacity of 2xOC-48. They also include a four-port packet-over-SONET/ATM card supporting dual-mode operation and multi-rate OC3c/12c/48c on any port, up to 1xOC-48.

Riverstone also is set to unveil a 96-port 10/100M bit/sec Ethernet card, and announce support for Layer2/3 VPNs and IPv6 on the 15008.

Turin Networks is scheduled to unveil a "next-generation

Ethernet" module for its Traverse SONET transport systems targeted at IPTV and Carrier Ethernet service applications. The NGE supports four Gigabit Ethernet links and 16 10/100M bit/sec Ethernet ports, and is designed to provide improved service resiliency and protection.

Key Ethernet/IPTV demonstrations are expected to include the Metro Ethernet Forum's display of its Carrier Ethernet specifications for Ethernet scalability, protection, "hard" QoS guarantees, TDM support and service management; and the Optical Internet-working Forum's demonstration of a distributed optical control plane interoperating among seven service providers for Ethernet-over-SONET/SDH adaptation and automated provisioning.

Other scheduled announcements include:

- Microsoft's pact with Sylanro Systems to integrate its applications with Sylanro Systems' VoIP technology to create richer collaboration services that carriers can sell. Microsoft is also announcing an agreement to develop interfaces between its products and Am-doc's operations and business support systems.

- Cisco's introduction of the Cisco Distributed Denial of Service Protection product, a hardware and software bundle that enables service providers to deliver managed DDoS protection.

- Sun's rollout of its Open Service Delivery Platform Solutions Program to help telecom service providers deliver new services. ■

■ See why Ethernet promises better bandwidth and lower costs. PAGE 30.



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MCI offers network protection service

■ BY DENISE PAPPALARDO

MCI this week is expected to officially launch its WAN Defense distributed denial-of-service detection and mitigation service aimed at helping keep networks safe from attacks that can bring services to a grinding halt.

Like competitors AT&T and Sprint, MCI is offering users a fully managed service that proactively detect attacks before a customer's network is taken out by malicious distributed DoS assaults.

MCI is using Arbor Networks' PeakFlow SP network behavior anomaly-detection products to pick up on distributed DoS attacks and Cisco's Guard XT device to mitigate these attacks.

MCI has deployed three Arbor devices throughout its network in the U.S. that create a baseline for irregular traffic on MCI's IP network and flag suspicious traffic, says Chris Sharp, vice president of security architecture at MCI. Those flags are then sent to MCI's security operations center (SOC), and the tainted traffic is sent to one of the carrier's mitigation centers, where the packets are scrubbed.

Sharp says that MCI also notifies the ISP where the distributed DoS attack traffic is originating, or the carrier immediately blocks that traffic if it originates from its own network.

MCI has been working on the service for months and expected to offer it in April (www.networkworld.com, DocFinder: 7439), but the carrier said it took extra time to integrate some of NetSec's security features with the service. MCI acquired managed security service provider NetSec in January for \$105 million (DocFinder: 7440).

The carrier is using NetSec's Finium risk assessment and forensic analysis platform with its WAN Defense service so MCI can better react to distributed DoS attacks, Sharp says. Finium is similar to AT&T's Aurora threat management system, which AT&T is currently testing with two of its customers (DocFinder: 7441).

MCI says it plans on integrating Finium with other MCI security services that it expects to announce in the next six months, Sharp says. He didn't say which services would be integrated.

Dallas-based Affiliated Computer Services (ACS) has been using MCI's WAN Defense service for three months, says Don Liedtke, senior vice president of emerging markets at the business process outsourcer and IT outsourcing company.

ACS, which is a Fortune 500 business and competes with companies such as EDS, is using WAN Defense for its corporate WAN, as well as for its customers that use MCI IP connectivity, Liedtke says.

"[Distributed] DoS is a problem from time-to-time. We have not had a lot of problems, but they are a nuisance," Liedtke says. "We wanted a preventative measure in place; who knows what's around the corner."

Liedtke says ACS also looked at anti-distributed DoS offerings from AT&T and Sprint, and is likely to deploy multiple services to support all of its outsourcing customers, including Brother International, Delta Airlines and the state of Montana.

WAN Defense is available for \$200 up to \$69,000 per month (see chart above). The carrier also includes a handful of service-level agreements with the offering. ■

Cost of fighting DDoS attacks

MCI's WAN Defense service can be purchased solo or bundled with the carrier's mitigation support. Here's how much it costs:

Stand-alone service*	
Bandwidth	Monthly fee
T-1, 1.544M bit/sec	\$200
T-3, 45M bit/sec	\$2,000
OC-48, 2.488G bit/sec	\$69,000
Bundled version*	
Bandwidth	Monthly fee
500M bit/sec	\$3,500
3G bit/sec	\$14,250

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Miniature

continued from page 1

says Iowa State University Professor of Computing Doug Jacobson, who heads up the project, which is funded primarily by the Department of Justice. "We'll look at attack tools and defense mechanisms. Our goal is to have this as a point where organizations can test security paradigms."

The school last year snagged a half-million dollar grant from the Justice Department, with another \$700,000 promised for this summer, to build the miniature Internet. Agriculture and construction equipment manufacturer John Deere also kicked in \$30,000. Iseage, basically a collection of PCs, servers and switches using custom-designed software to simulate routers and network nodes, was ready for its first game of Beat the Hacker last month (see diagram).

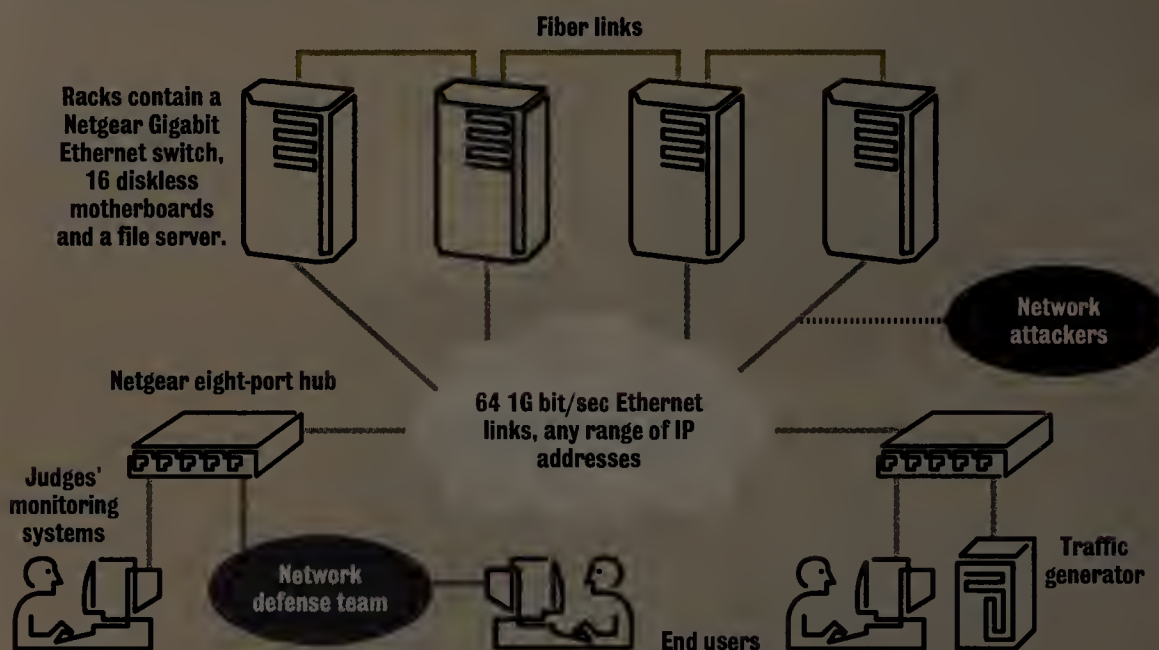
Iowa State's Cyber Defense Competition pitted teams of university students, who defended Web sites, mainly of their own design, against security professionals playing the part of attacker.

"My role was to break in and crash their servers," says Adam Kaufman, information security analyst for the state of Iowa in Des Moines. "It gave them a taste of what an attack is like."

The Web sites being defended ran on Windows, Unix and open

Under attack

Iowa State University recently hosted the Cyber Defense Competition, which challenged students to defend against mock network attacks. The project used a high-speed network called the Internet-Simulation Event and Attack Generation Environment (ISEAGE), which is something of a miniature version of the Internet. Judges were connected to the network so they could monitor the competition. Synthetic traffic was generated that made attack traffic harder to spot.



commands on it. Or we could upload files."

The scoring for the competition proceeded — as in golf — by adding up points for mistakes, making the lowest score the winner.

"The winning team recognized the attack before the other ones," Kaufman says. "You had to send e-mail to the judges

it would feel to have to defend a corporate network, he says.

Red Team members crashed servers many times, and one student team took its server offline to fix a vulnerability. Under the rules, the only offensive disallowed was a distributed denial-of-service attack (DoS), Kaufman says. Larry Brennan, information security officer for the state of Iowa, who was a competition judge, says the experience was fascinating, especially observing the students' attempts to ward off the array of attacks.

"One Red Team had used a printer to launch an attack," Brennan says. "The students were amazed, saying: 'Even that printer betrayed us.'"

While Iowa State plans to have additional Cyber Defense Competitions, the university also wants to see Iseage used for more than just fun and games.

Jacobson, also the founder and CTO at Palisade Systems, says there's a commercial need to be able to model the complexities of real-world Internet attacks.

"There hasn't been a test bed like this before, with the exception of the Deter test bed at the University of Berkeley, which was funded by the Department of Homeland Security to focus on [distributed] DoS," Jacobson says.

Deter, short for the Cyber Defense Technology Experimental Research, has a number of vendors, including McAfee, participating in it.

Palisade donated to Iseage one of its PacketSure appliances for monitoring network activity usage while an attack is in progress. For an as-yet unspecified fee, Iowa State will make Iseage available to organizations for modeling their networks for defensive purposes. The test bed is expected to be used by the state of Iowa to find out how its network, as recreated on Iseage, might hold up to various attacks under different defense scenarios.

"Everybody has had labs where you can do testing," Kaufman says.

"But here, you can use real Internet addresses and you don't have to change anything. You can look exactly like you're on the Internet," he adds. ■

“Our goal is to have this as a point where organizations can test security paradigms.”

Doug Jacobson

Professor of computing, Iowa State University

source operating systems. Some of the students who protected the sites used the Snort intrusion-detection system, and assorted firewalls. Competition organizers supplied content for the Web sites.

The competition, which lasted for 20 consecutive hours, began by having Red Team attackers use scanning tools, such as nMap freeware, to find out each student team's software configurations and determine where weaknesses might lie.

"I also used the Web Inspect scanner to find a vulnerability in a PHP page, for instance," Kaufman says. "One team had a server that allowed us to run

to let them know you saw what was happening. Some teams didn't even recognize we had broken into their server."

"We were supposed to configure the Web server to be secure, but mistakes allowed them to run Linux commands on our server," says Iowa State student Sean Howard, who was part of the winning team.

"They managed to get in and send a few e-mails," says Howard, who last month graduated with a bachelor's degree in computer engineering and intends to study information assurance on a graduate level. Overall, the battle on Iseage provided many lessons about how

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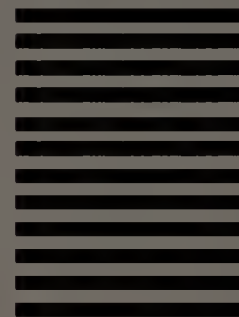
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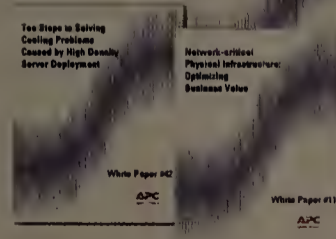
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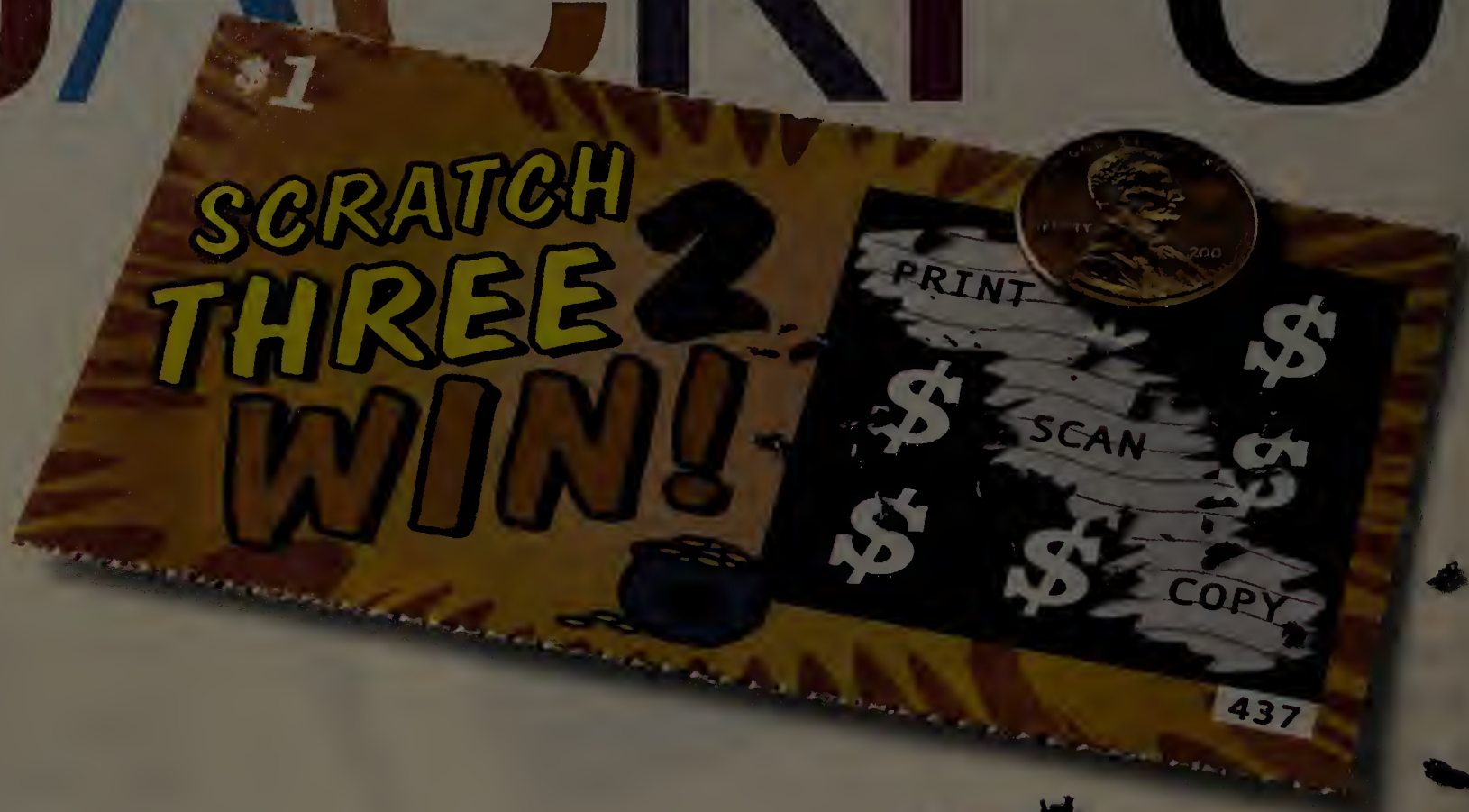
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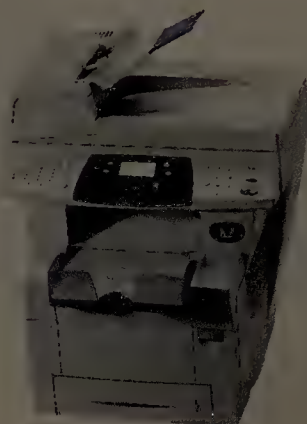
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3Com quarantines malicious traffic

■ BY TIM GREENE

3Com this week will introduce software that uses switches as enforcement points to shut down attacks on business networks, making it possible for users to quarantine infected machines that propagate malicious code.

New software for the company's TippingPoint Intrusion Prevention System lets the IPS intervene if individual machines violate security policies. The package requires no dedicated quarantine client on each device, which would require administration time to distribute, configure and maintain.

The new software can apply security policies to an IP device on the network including servers, desktops, PDAs, IP phones and

printers. When devices log on to the network via 3Com's automatic media access control (MAC)-based Radius Authenticated Device Access (RADA), it grants access to authorized virtual LANs and QoS on the network.

Other vendors are making similar efforts to block attacks and minimize any damage. Alcatel and third-party intrusion detection vendors team to use the company's Automated Quarantine Engine in Alcatel switches. Nortel's switches also support third-party intrusion-detection systems. Cisco's Clean Access software imposes similar restrictions. Enterasys' Automated Security Manager quarantines traffic via its switches.

The 3Com quarantine software works with any vendor's switches, but 3Com says response time for taking enforcement action is faster with 3Com switches by a matter of seconds, but has no specific numbers to support the claim.

With 3Com's gear, when a device connects to the network, its MAC address and IP address are logged, as well as what switch port the device is connected. If the IPS identifies the device as generating malicious traffic, the TippingPoint IPS can trigger remedial action such as shutting down the switch port or redirecting the machine to a secure VLAN that displays a Web page explaining what has happened and what action the user should take. For instance, the page might say the machine has been infected by a virus and to contact the help desk.

The software is an upgrade to current TippingPoint IPS and ships with new orders.

3Com also is announcing a new switch family, the 5500 series stackable switches, and the 7750 modular switch chassis.

The 5500 series includes both 10/100M bit/sec and Gigabit Ethernet models and comes with either 24 or 48 ports. The gigabit platform supports Power over Ethernet (PoE), as well as fiber connections.

The boxes come with two different software loads, standard and enhanced. The enhanced versions enable stacking eight of the switches rather than two and supports link aggregation to create larger logical links and to support redundancy. The devices also have one slot for an IPv6 router. The slot also can support a wireless switch, reducing the need for a separate device.

These switches are similar to high-density stackables from Enterasys, Extreme



3Com's new 5500 switches support high-density Power over Ethernet and act as enforcement points for its TippingPoint Intrusion Prevention System.

Networks and Nortel. They add PoE support in the 3Com line, something it lacked in high-density switches, says Steve Schuchart, an analyst with Current Analysis.

Customers adding switches to their networks that don't include wireless or VoIP might want to add them and seek the assurance that they can get it without replacing all their switches again, he says. "Not every customer is going to buy [PoE], but you've got to have it," he says.

The 7750 modular switch supports 48-port 10/100 or Gigabit Ethernet cards and

comes in a four-slot and a seven-slot version. So the smaller version can deliver PoE to 144 ports and the larger to 288 ports. Schuchart describes this as a PoE update for the 3Com 7700 switch, and says it lacks a redundant management card, something that was available with the 7700. "If you're considering doing telephony with a switch, you want redundancy," he says.

3Com also is announcing upgrades to its Enterprise Management System that supports role-based access to management

See 3Com, page 20

Short Takes

■ **Nortel** is offering a fix for a vulnerability that could let an attacker crash its VPN routers with a single malformed packet. The denial-of-service vulnerability, reported by Internet security testing company NTA Monitor affects several models in the Nortel VPN Router line, formerly known as Nortel Contivity. NTA characterized the vulnerability as serious, and Nortel gave it "major priority" status. An attacker could cause the routers to reboot or to crash by sending a single IKE (Internet Key Exchange) packet with a malformed ISAKMP (Internet Security Association and Key Management Protocol) header, according to NTA. In testing, most routers restarted — which takes about 5 minutes — and some required manual intervention to be restarted, NTA reported. The vulnerability affects every product in the VPN Router 600, 1000, 2000, 4000 and 5000 lines. Nortel recommends upgrading those systems to Version 5.05.200 of the software, which was released last month, or to install the patched versions of the version 4.76, 4.85, 4.90 or 5.00 software, which will be made available in June, according to a Nortel security bulletin.

IronPort aims high with e-mail security appliance

■ BY CARA GARRETSON

IronPort Systems this week announced a new version of its e-mail security appliance for large organizations that can process up to 1 million messages per hour.

Called the X1000 and priced starting at \$90,000, this mail transfer agent is tuned to offer the high performance that large companies and ISPs need, says Tom Gillis, IronPort's senior vice president for worldwide marketing. In addition, the new appliance offers protection from inbound and outbound e-mail abuses such as spam, viruses, and phishing through the included Reputation Filters that rate the sending history of a given IP address.

The Reputation Filters use IronPort's SenderBase database that tracks e-mail being sent over the Internet and can flag suspicious activity such as addresses that

send bursts of mail in a short amount of time.

Also available are third-party filters for virus protection from Sophos and Symantec, as well as spam protection from Symantec's Brightmail division that are sold separately.

IronPort has included with the X1000 DomainKey e-mail authentication technology that was developed by Yahoo, Gillis says. This technology authenticates an e-mail's sender by using public and private keys to match the content of a sent message with one stored on the sender's server, verifying the sender is who he says he is.

The process of matching public and private keys is a simple DNS look up, Gillis says, but can affect how quickly mail sent using DomainKeys is processed. IronPort has tuned the performance of the X1000 to

See IronPort, page 20

TOLLY ON
TECHNOLOGYKevin
Tolly

In an astonishingly short time, "broadband" has evolved to mandatory "utility" status for many households — especially those that serve as temporary or permanent "branch offices" for businesses large and small. After electricity and water, the broadband connection is often the next most vital resource. Yet, for all its importance, users have little visibility into it beyond knowing whether it is on or off.

Unfortunately, while this level of knowledge is sufficient for water and electricity, it isn't for broadband. Most of the time we've chosen which level of service to purchase, yet we have absolutely no way of knowing whether we are getting what we pay for.

Put another way — the service provider guarantees to bill us the higher amount if

Broadband service providers keeping secrets?

we "upgrade" while simultaneously notifying us that in no way are they obligated to deliver any service level greater than "on."

Herewith the footnote from my current provider: "Adelphia does not guarantee speeds, as the speed of the Adelphia Broadband Service provided to you at your site will vary depending upon your computer and associated equipment, Internet traffic and associated equipment, and other factors."

For business users trying to be productive from a small office-home office (SOHO) office these "factors" are too important to be dismissed with a footnote.

While we'll grant that the service provider can't be held responsible, if it can't be held responsible for its part of the edge, who can?

Given that we have alternatives — many U.S. locations can have their pick of DSL or cable modem — it would be nice to have some data about the infrastructure and its performance.

Without such data, I imagine many follow

my pattern. I install cable modem service because the installation period is three days instead of three weeks. Then, when I get tired of 15-second response time for loading simple Web pages, I order up DSL to replace cable.

Given that the service-level agreement (SLA) is a non-SLA, my choice appears either to switch providers or acquiesce to "whatever" I happen to get — good, bad or indifferent.

For all I know, my poor response time is because the kid next door is an unwitting high-speed LimeWire file server to the globe. They used to say that users of shared services like cable would see performance degrade when the neighborhood kids got home from school. Now with peer-to-peer, you can experience (perhaps) that some degraded performance 24/7.

So service providers, how about some hard facts? How come cable users can't find out how many other users they are "sharing" with? Why is it a secret? Are you underprovisioned and don't want us to

find out? Never.

What are you doing to protect us from having incessant, peer-to-peer transfers of mega-files from crushing our SoHo productivity? Given the insidious nature — and massive popularity — of programs such as LimeWare the offending party is likely not even aware that they are causing the problem.

When the water company sees a constant flow of water, it's smart enough to know that something is not right.

When the data pipe streams, it goes unnoticed. We know that this data exists and even a little data mining could help spot intentional or unintentional bandwidth abuse and, ultimately, improve quality for the overall customer base.

Service providers, set me straight. What am I missing here?

Tolly is president of The Tolly Group, a strategic consulting and independent testing company in Boca Raton, Fla. He can be reached at ktolly@tolly.com.

Aruba corrals foreign wireless LAN clients

■ BY JOHN COX

Users can corral foreign wireless LAN clients trying to connect to corporate networks, and grant them limited access to specific resources, using new software from Aruba Wireless Networks and Sygate.

The Client Integrity Module software announced last week lets companies control WLAN access by unmanaged WLAN clients, such as a notebook or PDA brought on-site by a supplier, contractor, salesperson or other visitor. If these foreign devices pass inspection, they can be given controlled access to specific resources. If they fail, they can be blocked or shunted to a

quarantine site to get the needed anti-virus upgrades or security patches.

Aruba worked with Sygate to incorporate the Sygate On-Demand Agent into the Aruba switch operating system, linking the agent with Aruba's built-in stateful firewall. When the switch detects an unmanaged client, it can activate the client's Web browser and download the Sygate agent, which is about 500K bytes.

The agent scans the client, based on one or more policies created by an administrator. It can check for up-to-date anti-virus software from vendors such as McAfee, Norton and Trend Micro, for personal firewalls, for Windows XP patches and software updates, for specific system registry values, and even for specific files. The results of the scan are sent back to the switch. The switch can adjust the firewall

settings, to control what the client can access, and download additional modules, such as a Sygate program that cleans browser and file caches.

Network administrators set up the system using a Sygate PC program, called On-Demand Manager, selecting the detailed information the agent is to check for such as the McAfee anti-virus software. The result is compiled into an XML file, which is then loaded on each Aruba switch in the WLAN. Separately, the administrator works on the designated Aruba master switch to set up the corresponding firewall policies. This process involves creating rules, such as "if the anti-virus check fails, redirect the client to the following location to get the latest anti-virus update."

The switch, using 802.1X authentication and Microsoft Group Policy Objects, can

distinguish between managed clients, for example, a corporate notebook configured for the network, and an unmanaged client, such as an employee's personal notebook or PDA, according to Merwyn Andrade, Aruba's CTO.

The key, he says, is that the unmanaged devices will lack a digital certificate, and will be unknown to the network. Once the Aruba switch gains that information, it can start the process of downloading the Sygate agent.

The Sygate modules that now are part of Release 2.5 of the agent, and included in the Aruba offering, include one for blocking malicious code execution, for detecting keystroke loggers, and a secure virtual desktop.

The virtual desktop creates on the client a temporary space for working with specific confidential data. The desktop encrypts/decrypts data, limits what applications can be used with it, and whether and how the data can be saved.

This is Sygate's first such deal with a WLAN switch vendor. Aruba seems to be the first WLAN vendor to incorporate third-party client scanning software in an effort to control access by unmanaged clients. Aruba competes with Trapeze Networks, Symbol Technologies and Cisco/Airspace.

The Client Integrity Module has a starting price of \$500 per switch, for the entry-level Aruba 800-4 four-port device. ■

3Com

continued from page 19

functions and logging of rules changes that can be used for auditing to meet regulatory requirements such as the Health Insurance Portability and Accountability Act and the Sarbanes-Oxley Act. The platform also supports improved integration with umbrella management systems such as Tivoli, OpenView and Unicenter, making it simpler to manage multiple thousands of devices.

The 10/100 models ship this month; the gigabit models ship in September. Non-PoE 10/100 switches range from \$2,500 to \$4,500, and from \$3,800 to \$6,500 for PoE.

Non-PoE gigabit switches range from \$6,000 to \$11,000 and from \$7,500 to \$13,500 for PoE.

The 7700 chassis costs \$1,800 to \$4,000, switch cards cost \$5,000, and a 48-port gigabit card costs \$5,000. ■

IronPort

continued from page 19

be able to handle these look-ups without performance degradations, he says.

The company will make DomainKey technology available to users of its other appliances through an upgrade to its operating system called AsyncOS. This upgrade will be available during the second half of the year at no additional charge for existing users with service plans.

While DomainKey technology would provide an extra level of protection from messaging abuses, it might be overkill for some users. Corestaff Support Services, a temporary and permanent-staffing company, is content running IronPort's C60 appliance to protect its 2,000 users from spam.

"We're very happy with the Brightmail and SenderBase parts. Obviously it doesn't get everything, but [spam] isn't a pain point for us right now," says Donald Murphy, manager of Corestaff's technology support.

Although IronPort will make DomainKey technology available across its product line, the company continues to support other sender-authentication initiatives, including SenderID. Gillis recommends companies employ both because two technologies go about verifying a sender's identity in different ways. While DomainKey focuses on authenticating the content of a message to verify its sender, SenderID is designed to check the sender's IP address.

IronPort competes with e-mail appliance vendors including CipherTrust, Proofpoint and BorderWare. ■



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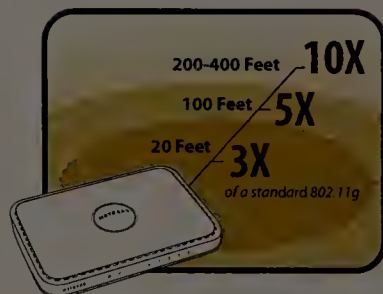


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Inside:

COVER STORY

Bit Buckets

Storage options for cleaning up the PC junk drawer
Page 10.

FEATURES

Content Everywhere

Strategies for streaming your multimedia files
Page 15.

Everything Old is New Again

New ideas to repurpose your old equipment
Page 16.

NEWS

4 Sticky Notes

- High-def jam
- Credit card cops
- Epson earns its salt

REVIEWS

8 Out of the box

- Maxtor's Shared Storage Drive
- Netgear's Double 108 Wireless Firewall Router

COLUMNS

6 Security chief

By Deb Radcliff
Don't ditch the landline or cell phone just yet

17 Connection coach

By James E. Gaskin
PATA vs. SATA and what we should do with the floppy disk

18 Off the clock

By Keith Shaw
Akimbo Internet player is great, but where's the content?

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Network Life www

From the editor

When



I was younger, storing a 10M-byte computer game on my father's PC drove him nuts. "Computer storage space should be saved for more valuable files," he would tell me. I can only imagine what he would think about today's storage needs on home networks, including music, digital photos, home videos and all those e-mails.

Home networks need centralized storage to save us from 16 versions of "Funkytown" spread out among six PCs. Luckily, network-attached storage devices are coming to the market that bring storage away from individual PCs to where it belongs: the network.

In addition, home users are notorious for not properly backing up their files. While in the past it might have been easier to cope with losing a file or two, in these days of 99-cent music downloads (I've spent at least \$250 at iTunes in the past year), saving files becomes a serious money-saving issue.

So in this issue of *Network Life*, we present our Storage Strategy Guide, offering tips and suggestions on the best ways to provide your home network clients (friends, family and neighbors) the storage and back-up protection they'll need to keep them (and you) a happy network citizen.

Once you've trained your users to store their files centrally, you can get them to enjoy their multimedia content in new ways by streaming them all around the house (see page 15). Our "Content Everywhere" story points out the many products on the market that aim to play music or stream video around the house.

There's lots more in this issue, as well, including a warning about home VoIP systems and our usual departments. We also would like to hear from readers about their *Network Life* impressions — have you been happy with what we've presented? What other topics would you like us to cover? Is this format the best way to present our advice? Send me a note at kshaw@nww.com and tell me what you like or don't like.

— Keith Shaw
Editor

Sticky
notes**Get ready for high-def DVDs****Toshiba touts 45G-byte capacity on new disc.**■ **MARTYN WILLIAMS**

IDG News Service (Tokyo Bureau)

TOKYO — Toshiba has developed a prototype HD-DVD disc that increases the format's storage capacity by 50% and brings it closer to that of the rival Blu-ray Disc, the company said last month.

The new disc has a capacity of 45G bytes, which is just less than the 50G bytes offered by a dual-layer Blu-ray Disc, and will give content producers additional space to store longer high-definition movies or extras such as trailers, out-takes or interactive features.

Toshiba accomplished the capacity jump by adding an extra data storage layer to the disc. Each HD-DVD layer has a capacity of 15G bytes, and the new disc packs three such layers.

The company also announced a second prototype disc that uses the same basic technology. The hybrid disc combines a dual-layer HD-DVD with a dual-layer DVD to provide a double-sided disc that can be played in either HD-DVD or DVD players. The disc could be used as a transitional format that lets consumers buy



discs for use in DVD players while building up a library of high-definition content for when they purchase an HD-DVD player.

The announcement could give Toshiba a boost in ongoing talks with Blu-ray Disc supporters Sony and Matsushita Electric Industrial (Panasonic), regarding a single, unified, high-definition videodisc standard.

The talks began earlier this year and are aimed at heading off what many expect will be a damaging format battle that will harm both consumers and the consumer electronics and entertainment industries.

The HD-DVD industry group said in January that it plans to have players and content available in U.S. stores in the last quarter of this year. The first machine to support prerecorded Blu-ray Disc is expected to be announced next week when Sony Computer Entertainment shows off a prototype of its next-generation PlayStation 3. The console and other Blu-ray Disc players aren't expected to be commercially available until 2006. ■

Protect yourself from charge-backs

Mom and Pop businesses usually can't tell if a credit card used for purchases is bogus. That puts them at risk for charge-backs, which banks charge merchants when charges are disputed. These charge-backs can run between \$25 and \$45 per fraudulent charge, not to mention the cost of the merchandise that has been shipped.

If friends or family are conducting any type of online commerce, direct them to a \$59 primer on credit card security from

www.preventchargebacks.com. CardCops.com screens credit cards for merchants for \$10 per month, and can screen cards for consumers for \$15 per year. More resources are at www.merchant911.org.

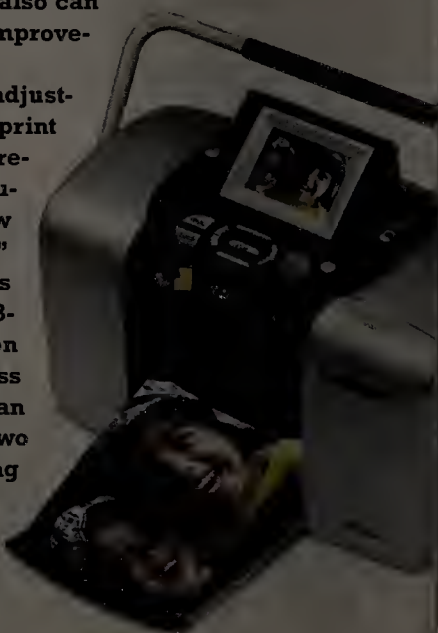
**Epson upgrades photo printer**

Our favorite digital photo printer from last year just got a big brother.

Epson says its PictureMate Deluxe Viewer Edition is a premium version of its PictureMate printer, with new features such as a color LCD and extra printing and editing features to let users print photos without connecting to a PC. The new printer also can print photos as fast as 75 seconds, a 40% improvement over the original PictureMate.

The 2.4-inch color LCD screen has a tilt adjustment to let viewers see images before they print them, watch a slide show, crop photos or preview adjustments made for brightness, saturation or sharpness, Epson says. The new printer features Epson's new "print by date" feature that lets users select and print photos taken on specific dates. It also now can print 3-by-4-inch mini-wallet size photos in addition to its classic border and 4-by-6-inch borderless photos. An optional internal battery (\$70) can be added to let users print photos up to two hours (about 60 to 80 photos) without being plugged in (the battery then can recharge via AC power).

The Deluxe Viewer Edition will cost \$250 and is expected to be available later this month, Epson says.

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DEB RADCLIFF



Security chief

Don't ditch the landline yet

Home VoIP is cool, but needs safety and reliability fixes first.

Eight million households are using VoIP, according to Synergy Research Group — no doubt, some of your friends and family among them. And they're probably unaware that VoIP raises safety and reliability issues that have yet to be worked out.

So here's the best piece of advice you can give them: Don't ditch your landline or wireless service just yet. For starters, there's no guarantee that when they need it most, home VoIP users will get a connection to a live, 911 operator.

That's because of a lack of standards between service providers and transport carriers, particularly at the trunks to the call centers, where a call could potentially drop off.

Houston family dials 911

That happened to a Houston family when Peter John and his wife were shot during a botched home robbery and couldn't reach 911 on their VoIP phone, according to an April Associated Press report. When the couple's daughter discovered her injured parents and dialed 911 on the VoIP phone, she got a recording telling her to hang up and dial 911 on another phone.

Providers such as Vonage, which has no direct trunks to 911 operators, will place the calls for you as long as you remember to register your phone's whereabouts and update the registration when you move. Otherwise, Vonage has no way of knowing that the emergency call should be dispatched to the emergency services center in your

new location, says Louis Mamakos, CTO of Vonage.

There are signs this problem will be resolved by year-end. Deals are being cut between VoIP service providers and trunk operators.

And network providers such as Level 3 Networks are trunking cable into public services answering points so VoIP users of its Enhanced 911 service can reach emergency dispatchers regardless of the phone's location.

Other security issues around VoIP require proper authentication, fire-

wall and VPN tunneling, which have yet to become standard.

In the meantime, remind users that the Internet is less reliable than dedicated circuits.

Calls could, for example, be slowed or lost in the event of a widespread virus or worm affecting traffic, such as SoBig and others.

To be safe, tell them they should have a back-up telephone system.

Radcliff (www.deb.radcliff.com) is a freelance writer specializing in online safety and network security.

Best practices for securing VoIP

Four safety tips to ensure a successful VoIP migration:

1. Secure the account: During account setup and updates, the provisioning of resources to users should be conducted over an encrypted tunnel with strong authentication. Be wary. Not all service providers do this. And that leaves the boxes vulnerable to hijacking and malicious code injection, says Louis Mamakos, Vonage CTO.

2. Secure the network: VoIP opens vulnerable ports through network address translation firewalls and forgets to close them. Look for hardware that provides an all-in-one firewall and voice. Service providers also offer firewall/VoIP boxes, or, at the least, the voice adapters should be able to synchronize with existing firewall/routers.

3. Secure the call: Pick a box that includes easy VPN setup. While most VoIP service providers don't encrypt calls across the Internet yet, they will, especially because companies already demand this, says Doug Makishima, vice president of products for Intoto Software, platform provider to residential and SOHO gateway vendors.

4. Secure the chain: Competing signaling security standards and carriers can cause outages and delays as VoIP data traverses the Internet. Look for vendors that use SIP to support multiple standards, such as Secure Real Time Protocol and IPSec.

Cisco in March announced its shipment of more than 1 million VoIP gateways, making it the most successful product launch in the company's history.

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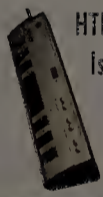
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- I-line tel/modem surge protection
- \$500,000 Insurance

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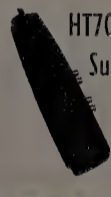
- 10 outlets; 8 ft. cord
- 3570 joule rating
- Isolated Filter Banks; metal housing
- 3-line coaxial (gold) surge protection
- I-line tel/modem/network and I-line tel/modem surge protection
- \$500,000 Insurance

HT1010SAT3
Surge Suppressor



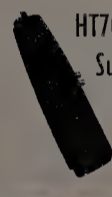
- 10 outlets; 10 ft. cord
- 3345 joule rating
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- I-line tel/modem/network surge protection
- \$250,000 Insurance

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- I-line tel/modem surge protection
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REVIEWS

Maxtor Shared
Storage Drive

Netgear Double 108
Mbps Wireless
Firewall Router

Out of
the box

NAS gets exciting (sort of)

Maxtor drag-and-drop feature gets us giddy, but where's the backup?

■ BY JAMES E. GASKIN

Maxtor knows hard disk drives, as its OneTouch external drives have great market presence. The company recently moved into the network-attached storage market with its Shared Storage Drive.

We tested the device and were surprised at some of the choices Maxtor made with the product, aimed at the home and small-business markets. It's as if Maxtor didn't commit to providing all the features either market needs and falls just short of both.

Physically, the device looks like a OneTouch II unit, with an anodized aluminum housing and a small fan that makes little noise yet still stays cool. Drive capacities include 200G or 300G bytes (\$299 and \$399 respectively).

The drive behaved as a proper DHCP client and took its cue from our network router. It also can act as a DHCP server, but Maxtor configured it correctly to look for a current server first (not always the case in this sector of the NAS market). Because the IP address can't be known ahead of time, Maxtor thoughtfully puts an icon in the management utility in a Config folder on the drive. One click and the browser connects to the drive, regardless of its IP address. The user guide says only Microsoft Internet Explorer 6 is supported, but Firefox 1.01 also worked for us.

Installing client software on each PC also creates a full directory structure for each user on the Shared Storage Drive, which is private by default. This encourages users to save their files to the Maxtor disk, a good idea because it centralizes storage and makes subsequent backups easier.

The setup routine was smooth, giving us chances to change the drive name to better fit a current network, add administrator passwords and perform other housekeeping tasks. Maxtor adds a configuration page listing most details for easy printing.

Our first surprise was noticing that the Shared Storage boxes have no back-up software. Home users need backup help, and most NAS units include back-up software to run on each client and store back-up files on the NAS hard disk. True, you can download plenty of third-party back-up applications or even trust Microsoft's back-up utility, but Maxtor's lack of any back-up software puzzled us, especially since the company does a good job with its external PC disk units. Maxtor says it plans to add free back-up software this summer.

However, the excellent new drag-and-sort feature on the box almost makes up for the backup oversight. Client software installed on each PC offers the option to turn on this feature, in which dropped files are automatically sorted into folders named My Documents, My Music, My Photos, My Videos, My Software, My Sites, My Library and My

Maxtor Shared Storage Drive

Price: \$299 (200G bytes), \$399 (300G bytes)

Installation time: 5 minutes

Ongoing maintenance: Not and forget

Bottom line: The drive is excellent but needs backup software and over-the-shoulder management software to make the joy of easy installation and drag-and-sort last.

Backup (you can drop files there directly for backup if you wish). Drop a file with a .doc extension onto the Maxtor desktop icon, and the file drops into the My Documents folder (about 100 file extensions dictate the landing folder of dropped files). The shared folder has the same structure but uses the names Our Music and Our Documents. Unfortunately, dropping files onto the shared folder doesn't invoke the drag-and-sort feature.

Like a business device, the box includes two USB ports that support printers. But like a home device, no printer management controls are included. Like a business device, one or both of the USB ports can also support external storage devices. We plugged in an Olixir Technologies 3DX 180G-byte Mobile Data Vault and got good news. The user guide says only FAT32 drives are supported, but the NTFS-formatted Olixir box appeared as an extra volume on the Maxtor. We re-formatted the drive as FAT32, and it showed up again, as it should.

We hope Maxtor figures out the inconsistencies and Version 2.0 improves upon the excellent start here. With some fixes, the next version could be as popular in the NAS market as the OneTouch is in the external disk drive arena.

Gaskin can be reached at readers@gaskin.com



Some speed bumps in the wireless 'fast lane'

Netgear offers 802.11a/g speeds, weak interoperability.

■ BY PETER HEBENSTREIT

If gaming and multimedia applications have home users balking at bandwidth congestion on their 802.11g networks, the fast lane glow of 802.11a beckons.

Netgear's WGU624 (Double 108Mbps Wireless Firewall Router) is a dual-band 802.11a/g wireless router that's a major step up from single-frequency gear. By taking advantage of the 802.11a network, you can opt to connect devices over the less-congested frequency. The "double 108" pitch involves using two separate devices and networks to connect to the same access point. But don't think you'll get 216M bit/sec of speed—you'll only get "108" performance on two distinct networks.

The 108M bit/sec speed router uses proprietary technology to improve performance. The data rate appears to be the result of data compression, packet bursting and large frame support, rather than an actual speed increase. By utilizing larger packet sizes, more data is stuffed into each packet; compressing these larger packets provides a higher throughput rate on the network.

We were frustrated with several configuration settings, and interoperability with non-Netgear devices was so poor we can't recommend this for non-Netgear households. In order to utilize security settings, all connecting devices must be Netgear devices, and are controlled through the Netgear Smart Wizard.

802.11a is admirable

Netgear recommends reserving the 802.11a network for high-bandwidth applications such as gaming and multimedia. The "HOV lane" is used when the otherwise crowded 2.4-GHz range limits bandwidth resources. The concept is admirable, but without the ability to pool the bandwidth from both frequencies, you must configure specific devices for each network individually and use them independently. If you have only a few devices on the network, we recommend configuring everything on 802.11a. But if you have a more complex

environment, reserve 802.11a for those higher-bandwidth applications.

By isolating the devices that require more bandwidth on a separate network, you allow them maximum throughput. Additional devices on the same frequency also can add noise or signal interruption, which will affect wireless performance in speed and range of the wireless signal.

Wireless telephones operating at 2.4 GHz and microwave ovens affect the 802.11b/g wireless frequency, giving 802.11a an initial edge in providing a clearer signal over 802.11b/g networks.

A limitation of the 108M bit/sec speed on the 802.11b/g network is that it must use Channel 6, the default (and thus most crowded) channel for most 2.4-GHz gear. However, you can choose which channel you use on the 802.11a network, further ensuring less data congestion.

Specific speed support (such as the 108M bit/sec rate) must be configured on client devices and the router. If the router or client doesn't force the connection you're attempting, it will fail or connect at a lower speed. For example, 108M bit/sec support must be configured on all network devices to achieve that rate. Although Netgear includes the ability to auto-detect compatibility for the 108M bit/sec speed, in our testing it didn't work as documented.

In addition, only Netgear adapters worked with any of the security settings enabled. When we added non-Netgear ones, we couldn't obtain an IP address on what appeared to be an excellent connection to the access point (even with a static IP address).

We were impressed with Netgear's Extended Range technology, which extended the range of both the 802.11a and b/g connections by roughly 40 feet in our tests.

The technology aims to maintain wireless connections even with a weak signal,

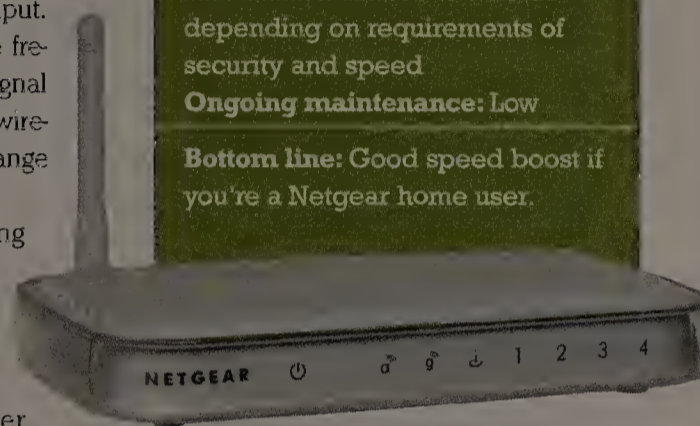
Double 108 Mbps Wireless Firewall Router

Price: \$157 retail or \$105 through Amazon.com

Installation time: 1 to 5 hours depending on requirements of security and speed

Ongoing maintenance: Low

Bottom line: Good speed boost if you're a Netgear home user.



which reduces the number of dropped connections when working at the outermost edges of the network.

Our standard bandwidth monitors couldn't pick up the 108M bit/sec data-stream, but with a few advanced system tools and some rudimentary monitoring, we could see a speed improvement with the 108M bit/sec network compared with the 54M bit/sec settings. On average, we saw data rates of 9M to 18M bit/sec, with bursts up to 31M bit/sec on the 802.11b/g/a networks when using the WG111U (USB) or WG511U (PC Card) adapters. When connected at 108M bit/sec, we saw an average transfer rate between 12M and 24M bit/sec, with bursts up to 32M bit/sec. Most of the packet frames utilized the 54M bit/sec packet size, but the actual data rate was lower.

The basic features of the WGU624 are very strong. Site blocking is exceptional, blocking by time of day, specific domains, keywords, IP restrictions and exceptions, plus e-mail notification when rules are broken. The router also lets you map ports to IP addresses to better track network usage. The documentation and Web-based configuration tools were also outstanding.

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Bit

It's not just about data any more.
Home storage strategies need to take
into account everything from photos
to music and movies.

■ BY JAMES E. GASKIN

Home network users are making the same storage mistakes business network users did in the mid-1980s. The IBM XT, with its whopping 10M-byte hard disk, let users keep their own files, defusing the push to use file servers to centralize storage. Decisions about storage locations, file organization and back-up tools — critical for the office 20 years ago — now must be made in every home with two or more PCs.

Most homes have a junk drawer (or closet) used to hide items. If your friends and family use their PCs as a junk drawer, you will get called for help far more often than you want. A messy home data storage system will cause endless frustration and money.

When the question, "How do I add more storage?" comes your way, remember (but don't admit) your early mistakes and push them toward centralized storage.

Granted, your next-door neighbor won't come and say "please help me backup more often" even though he should. But if you recommend the right storage plan, backups should be easier and performed more often.

Storage upgrade options

Replacing a hard disk with a larger one (or adding a second drive) was once the only affordable choice for home users. External hard drives connected via USB now are becoming more popular, as the USB 2.0 standard has increased throughput considerably.

External USB hard drives automat-

USB EXTERNAL HARD DRIVES ARE GOOD FOR:

- Adding extra disk storage without opening the computer case.
- Individual PC backup (most users).
- The new sneakernet (transfer between PCs).

Markets

ically appear as usable storage in Windows 2000 and XP systems. The drives can be moved between computers, which gives a 21st century twist on the sneakernet of old, where people carried floppies from computer to computer (and overwrote files hither and yon).

The drives can provide back-up services, and many units come with fairly sophisticated back-up software. The Iomega REV drive, an update of its old Zip drives, hold 35G bytes rather than 100M bytes and comes with real-time back-up software keyed to file changes. While counting on users to reliably use these back-up options for one PC might turn out well, normal users won't move the devices between systems enough to get good backups. Pricing for external USB hard drives has dropped to less than a \$1 per gigabyte, and they are best used as a way to expand current systems.

The USB thumb drive has become the new floppy. Some devices, such as the Cruiser line from SanDisk, now include automatic folder synchronization software (PocketCache) aimed at being used for backup. Unfortunately, this only works for one PC because, like the REV drive, users probably won't remember to use the software on multiple machines. Depending on capacity, pricing ranges from \$10 to \$200 for a 20G-byte portable drive.

Although you understand the nature of users and don't expect much, remind your family and friends that USB drives are not a legitimate option for extra storage or regular backup, except for one computer. Even

though the new Kanguru Zipper Pro USB drive (\$199) holds 20G bytes in the space of six stacked credit cards, these devices aren't suitable for shared network storage because they generally get attached to one PC.

Getting NAS-ty

With more PCs attaching to the home network, network-attached storage (NAS) devices look like a better way to pull storage out of the computer case. NAS vendors are finally helping home users organize their storage and setting the stage for a huge leap in home data management.

Parks Associates estimates about 200,000 home NAS units were sold in the U.S. last year, about 1% of the total home network market. The cost of home-appropriate NAS units has been hovering at around \$2 per gigabyte, but three things will drive down that price:

- Broadcom's "NAS on a chip" that includes the network operating system for these types of devices.

PORTABLE USB DRIVES (CAPACITIES RANGE FROM 64M BYTES TO 20G BYTES) ARE GOOD FOR:

- Backing up several PCs (reliable users only).
- Moving files between office and home.
- Moving files between home and school.

PORTABLE USB DRIVES ARE BAD FOR:

- Multiple system backups (people regularly won't do it).
- File sharing among home computers.

CHRISTOPHER NAVIN

- Buffalo's TeraStation device, which packs a terabyte of storage, brings the price down to about \$1 per gigabyte.

- Mainstream acceptance of storage issues.

You might think it silly to push home users toward NAS, but these are not the same kind of NAS boxes you see in the data center. The home NAS systems are basically USB external hard drives with a minimal network operating system. Each system we've tested runs some type of embedded Linux that stays well hidden under a browser-based administration utility. This provides rudimentary file locking that works fine



with standard commercial applications and provides file access (in most cases) for Macs and Linux/Unix systems through the Network File System.

So far, a lack of interest in the market hasn't slowed NAS innovation. Buffalo's TeraStation (\$800, \$1,000 or \$2,000, depending on capacity) might be the ultimate home network bling. Tritton offers a NAS box with built-in wireless access and another model that packs a NAS into a router/firewall and wiring hub. SimpleTech's SimpleShare VHS-cassette sized, sleek, aluminum case looks at home

BACKUP 101

Corporate data backup is automatic and reliable and the data is stored off-site for disaster recovery and redundancy. Home data backup is infrequent, untested and one hard disk failure away from useless. Yet family photos and personal e-mail mean more to people than any corporate sales report. Family and friends often don't know how to protect that data.

With downloaded music costing about 99 cents per song, hundreds of hours of music can add up to about \$1,500 — more expensive than the computer holding the files. A 160G-byte hard drive can store more than \$40,000 of digital music. That's a serious dollar loss, and it should get your family and friends to think about backup, especially because that music is worthless if the licensing file gets lost.

What to backup

Home users don't need snapshot disk images so they can recreate a system within an hour. Help them collect their operating system and application CDs and keep them in one place, so in case they must format or replace a hard disk, they can reinstall everything easily, if not immediately.

Most people want to back up the following:

- Financial records
- E-mail from family and friends
- Music
- Genealogical data
- Photos

Financial records are easy because they don't take tons of room. After a decade of using Quicken, my backup folder is less than 60M bytes. That will fit on a USB thumb drive or CD, and will even fit on any Iomega Zip disk format (they start at 100M bytes).

E-mail causes more problems. Microsoft's Outlook and Outlook Express are the most popular products, and they encourage people to keep everything inside those applications. Unfortunately, the Outlook PST file

grows fat, fragmented and fragile over time. Worse, copying the open PST file is difficult for many back-up applications, so users often must close Outlook for a good backup (close all applications, reboot the computer, then back up to get those open files).

Users who rip music from their own CDs already have a backup — the CD itself. Users who rip music from their old albums might want to protect those files because of the extra hassle getting the music from vinyl.

Users who download music must pay particular attention to their licensing files. Back these up in

multiple places, including to USB thumb drives and even floppies if the file is small enough. Losing the licensing file, which is tied to one computer only, makes the downloaded music worthless.

Grandparents tend to get computers for e-mail and genealogy. Most historical data comes on CDs in the genealogy application, but more sites now offer downloadable census data and the like. These files can be fairly massive, but burning each to its own CD is a great idea.

For photos, do

the following four steps:

1. Use an online photo album, keeping a copy of all important photos there.
2. Get film processed and delivered on CDs so users will have a digital copy as well as the negative.
3. Copy all photos directly from the camera to a CD burner rather than a hard disk. This gives a back-up immediately, and users can label and date the CDs like they labeled photo envelopes.
4. Send family photo sets on CDs or DVDs to parents and siblings. Sharing the photos is more fun, and safer, than leaving them on a hard disk.

THREE WAYS TO BACK UP FOR FREE

1. E-mail critical files to a friend or family member.
2. Use the huge disk space available from e-mail providers such as Google Mail (1G byte) and SBC/Yahoo DSL (2G bytes e-mail storage) and e-mail your files to yourself.
3. Use extra storage on a family or business Web site to store back-up files.

among expensive audiophile equipment (and is silent). Linksys has two different units with removable hard disk trays for easy capacity upgrades (one tray is empty to start on the base units).

Hitachi plans to release its own half-terabyte home NAS unit this year (because Hitachi makes a considerable number of high-performance disks, this could be a screamer aimed at audio/videophiles).

All NAS units for homes and small businesses include some level of client back-up software (albeit often poor). Luckily, readily available back-up software can be used with any of the NAS units on the market.

All home NAS units rely on Microsoft client network protocols and security, leaving much to be desired

for a small business user but a workable system for home users. Some experience in network design will make life easier for home NAS users.

HOME NAS IS GOOD FOR:

- Sharing files (digital photos and music files, particularly).
- Non-client-attached backup (over the home network).
- Offering a shared print server (some models).
- Organizing files.



server will provide many of the same features. You're still stuck with strictly Windows networking and security, but in a home setting this can be handled, especially if no one uses the computer as a PC. Configure it and then take away the keyboard and monitor. You'll have some control over which users access which folders when you enable user-level secu-

Getting home users to buy a NAS can be tough. They'll say they can share an attached USB hard drive with other network users.

Technically true, but this relies completely on Microsoft network protocols and user-access permissions, which varies considerably depending on the reliability of the operating system version on the host computer (as well as the sophistication of the users). It also eliminates blocking the host user from any of the files stored, and Windows pass-through file performance isn't great.

If you can't convince them to go for a NAS, dedicating an older computer to become the storage

WHY NAS IS BAD:

- Pricier than a comparable USB external hard disk unit.
- Experience is needed to adjust the poor default security settings.

PICKING UP THE PIECES

There are stages to computer crash grief: first is disbelief, then curses, then pleadings to a higher power (this is when they call you), then hammers. With your help, your friend or family member can say goodbye to the old hard disk (through reformatting or replacement) and embrace the new. But they have lost their innocence. Use that to your advantage.

During reconstruction, change their behavior. They now will accept change because they have no choice and have to start from scratch. Set up the second data disk partition on their hard disk. Gather all the application disks and store them together for the next time (there will be a next time, I promise). Gather all the inadequate backups (on their various CDs) and break the news gently about how lousy the backup has been.

Drive partitioning

When the operating system and data live on different disks or parti-

tions, reformatting and reinstalling the operating system and applications is less time-consuming because you know your data is safe. Drives will fail, and operating systems will collapse, so prepare for an easier recovery next time.

Each drive partition looks like a separate physical drive to the operating system, and one large disk can support multiple virtual drives. Good luck explaining that to your neighbor who goes by "Crazy Bill."

I learned the hard way that creating separate application and data partitions can save hours of frustration when the operating system must be reinstalled. Windows XP (both Home and Pro versions) make it easier to move the My Documents folder from Drive C to a different drive letter (Start > right click My Documents > Properties > Move). When the data sits on a different partition from the operating

system, reformatting and reinstalling the operating system doesn't touch the data. You must still reinstall the applications, but the data remains safe (as long as you back it up).

The ratio of apps to data partition size depends on the user. Standard Microsoft Office documents take relatively little room, and I apportion the storage space two-thirds Apps, one-third data. Users into digital photography, music creation or copying, and any video applications should reverse that ratio at a minimum. Because an hour or two of digital video can take tens of gigabytes of disk space, you might need a 1 to 10 apps to data ratio for video fans.

Adding a second partition to the hard disk adds another drive letter. You can leave the data partition as E, or use Windows XP System Tools Drive Management to change the assigned drive letters.

RECOVERING DATA: HOW MUCH IS THAT PHOTO WORTH?

Photos drive disk recovery services because people will leave their only photos of a special event on a wheezing hard drive with no backup. It's a common mistake: When the photo goes to the computer and the camera memory cards get erased for the next batch of photos, we forget about backing up the new photos from the computer.

Or the camera will crash and keep the photos locked up in its flash drive.

Recovering a crashed hard disk takes money, starting with a non-refundable \$200 diagnostic fee (from DataDoctors.com, headquar-

tered in Tempe, Ariz., with more than 100 storefronts around the country). Software fixes to the operating system (usually spyware cleanup) can be done for the cost of labor, but if the drive has mechanical problems, the meter starts at or near \$1,000. Services can cost many times that depending on the complexity and speed requested.

Of course, damage to the hard drive means you can't get all the data, but Data Doctors works to get all they can. Ken Colburn, president of Data Doctors, says that 30% of his business is home users, double that of just a few years ago

when backup was something people only did in their cars. Colburn says 10% to 15% of their data-recovery customers are repeat customers.

Inform friends and family that a drive being sent out for recovery has the chance of being read by someone at the service location. Unfortunately, the only way to verify a file has been recovered is to read that file, but that makes some people nervous.

But if your information is worth more than \$1,000, you might not care if a service technician takes a look at your first grandchild entering the world.



erty. The important distinction is to move storage from a PC to a shared device, either a NAS unit or a "server," to make backup easier.

Organizing files

The My Documents folder has become the junk drawer for millions of PCs and billions of files. Sharing the My Documents folder between different users on one computer turns sibling rivalry into high-tech warfare. Sharing a single folder with different users across a network always leads to overwritten and accidentally deleted files, and a total lack of backup-and-restore compliance.

AVOIDING THE NEXT CATASTROPHE

To protect the drive electronics (and the rest of your computer) always use a battery back-up UPS to handle voltage spikes and sags. A surge protector is better than nothing, but well-protected drives cause less grief.

Organized hard disks require less head movement and extends the drive life (less wear on moving parts means longer life). They also make for easier data recovery if necessary. Microsoft Windows provides decent utilities for disk defragmentation and disk cleanup. Run these every quarter and after adding or deleting a large number of files.

Of course, always back up the system before running a new hard drive or file management utility.

Most NAS devices come with a Public or Disk1 volume open to all network users. Leave that for your family or friends to play with and create three other volumes: Music, Photos and Backups.

Volumes for most home NAS devices don't have set sizes, so all the volumes will share the total disk space. Separating the volumes in this manner will ease backups, as well as force some organization on the file system.

Families that want private folders should create private volumes and assign security to those volumes. "Money" as a volume is much easier to keep private than trying to set folder-level access. Such settings work well with a real network operating system and directory service, but home NAS units fall short. So take the safe way and create private volumes.

Properly segmented, individual volumes offer more backup flexibility when you want to copy the collected files in each volume. Use the Backup volume to store each individual user's files.

Convince your family and friends to consider storage as a shared, not personal, computing resource. Today's home network shares printers, access to the Internet, and video- and audiostreams — it also can share the movies, songs and photos that your home users create.

Adding more storage to the network is like adding a shed or building a garage — but if you don't help organize the junk, you'll still be sweating when they ask for help in finding something.

Gaskin writes about technology and has been helping small and mid-sized businesses use technology intelligently since 1986. He can be reached at readers@gaskin.com.

Content everywhere

Ways to stream media all around the house.

**BIT
BUCKET**

■ BY ROB GARRETSON

Sure, data backup is important. But everybody knows the killer app for network storage is home entertainment.

Microsoft's Windows XP Media Center Edition 2005 finally supports multiple TV tuners, high-definition video and DVD burning. At least 30 vendors offer digital media receivers or Media Center Extenders that stream digital content between PCs and TVs and stereos. DirecTV plans to unveil its Home Media Center this year, and Comcast recently partnered with TiVo to offer its software and service on Comcast digital video recorders (DVR).

But before you start advising friends and colleagues to turn in their old cable boxes or sell their satellite receivers on eBay, take a hard look at the cost, complexity and stability of today's home media options.

The Media Center PC is a compelling concept and in practice would make excellent use of network storage. Too bad it's not ready for prime time. Aside from the high cost — between \$800 and \$2,000 for a new Media Center PC, plus \$200 to \$500 for each extender necessary to connect a TV or stereo system — the technology is still immature. Your users won't tolerate glitches such as lag time in channel changing or an HBO movie blocked from streaming by copy protection.

If your users simply want to stream MP3 or WMA music to multiple rooms in the house, there are several digital media adapters (\$150 to more than \$500) that are easy to set up and work well even on older, relatively slow 802.11b networks. The \$249 Roku SoundBridge M1000, Slim Devices' Squeezebox (\$249 for wired, \$299 for wireless), Creative's \$200 Sound Blaster Wireless Music adapter and the \$149 Netgear MP101 are good choices. At the high end, the Sonos Digital Music System (\$1,200 for a two-room setup) is a dream come true.

Your Apple iPod fans need to know the only way to stream music purchased from Apple's popular iTunes service is to buy Apple's own digital media adapter. The \$150 AirPort Express includes a wireless router (but no firewall), a USB print server and both 802.11g and wired Ethernet connections. Many media receivers will play AAC music files streamed from iTunes, but the protected AAC files bought and downloaded from iTunes will only play on the AirPort.

If you want to hear FM radio or if you have rooms not already equipped with

music to any room.

Options for photo files

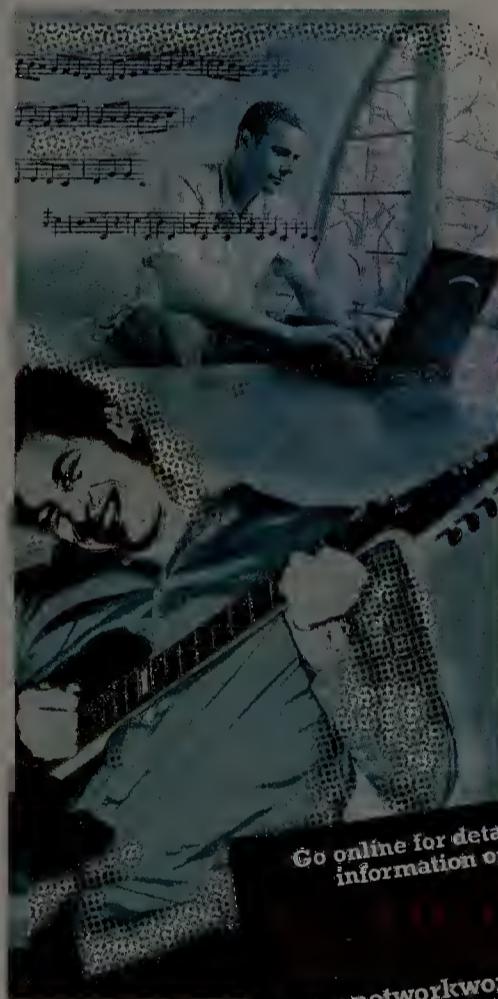
To stream photo files stored on a PC, consider the Linksys Wireless-B (\$130) and Wireless-G (\$230) Media Adapters, the Philips Streamium SL300i (\$299), the Pinnacle ShowCenter (\$300), Gateway's Wireless Connected ADC-320 (\$200) or Prismiq's MediaPlayer (\$200). These all stream JPEG files and also may support GIF, BMP, TIFF and other common photo formats. All except the Linksys Wireless-B model can also stream MPEG video files stored on a PC or NAS box, but bandwidth limitations will affect performance.

One of the best ways to stream music and share photos is with a stand-alone TiVo DVR (not the combination DirecTV satellite receiver with TiVo). The TiVo Series2 box (as low as \$99) connects to the network via USB (through a wired or wireless USB adapter) and lets you stream MP3 files and photos from a PC running the TiVo Desktop software (a free download). Multiple TiVo systems can stream recorded movies and TV shows among them, although the limitations of its USB 1.1 driver makes transferring programs for viewing later more practical than streaming shows in real time.

All these applications perform well on wired Ethernet and 802.11g wireless networks. Only streaming video struggles with the lower-speed 802.11b networks, although with optimum signal strength some streaming video works fine. Unfortunately, high-definition TV is the one datastream today's home networks can't handle.

Only a handful of DVRs can record and store broadcast HD signals, and none let you stream or copy those huge files.

Garretson is a freelance writer in Gaithersburg, Md. He can be reached at rgarretson@starpower.net.



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stereo speakers, the \$250 HomePod MP 100 from MacSense has built-in speakers, an FM radio tuner and Internet radio features. If radio isn't important, an inexpensive wireless boombox, such as the \$130 Linksys WMLS11B, can add streaming

Everything old is new again: Repurpose your PCs

**BIT
BUCKET**

■ BY JAMES E. GASKIN

Gartner says 133,000 computers per day are retired or replaced. But instead of pitching them into the dump where they leak mercury and lead, try the following ideas:

Back-up server

Every modern networked family needs help with backups. An older PC that can't run new games can still become a central back-up server. If you don't have a legal Microsoft Windows license, you can load just about any flavor of Linux and support Windows networking. Keep users off this system and dedicate it as shared storage only, and you'll have no virus or spyware issues. Configure the system without a password so it boots automatically, and take away the keyboard and monitor. Aim all the other computers' back-up target directories to the hard disk on this system. It's not the best back-up option because there's no off-site storage, but it's better than nothing.

Music server

Put your old PC near your entertainment center and plug the speaker-out connector to one of the auxiliary inputs on your receiver (you'll need a stereo 1/8-inch mini-plug to RCA connector patch cable from Radio Shack).

If you have a legal Microsoft Windows license, you can play a huge variety of Internet radio channels. If you don't, Linux versions (free or very inexpensive) now include comparable media players.

You might want to eliminate the monitor and keyboard for space and aesthetics. If you don't have a remote-control utility, check out RealVNC for a free utility that works on Windows and Linux systems so you can control the music from any other computer in the house.

E-mail station

Make an old system a dedicated browsing or e-mail station for family members to use when the primary system is busy. Even a Pentium I system can do instant messaging, which might reduce the conflict level in homes with several children.

Strip for parts

When removing computers from service, go-to guys might want to pull these components out of systems destined for recycling to help make future repairs:

- **Hard disk.** You might need to replace one, or add more storage. But if you do discard, get a file eraser utility and use it before sending the disk away.



NOAH Z. JONES

- **Sound board.** Enhanced sound boards, particularly those that cost \$100 or more, provide better sound and more features than sound chips on motherboards.

- **Network adapters.** Some people love to make their own firewalls, and you'll need two network adapters to make that work.

- **Graphics cards.** High-end video cards, especially gaming ones, provide more performance and features than video chips on motherboards.

Recycle responsibly

Leaving a PC at the curb isn't a good solution. Check out the National Cristina Foundation to give computers to the disabled. Check out Earth911 for a large collection of recycling locations and information. Look at dire statistics and helpful information from the Silicon Valley Toxics Coalition.

Many cities provide safe recycling drop-off locations for electronic equipment. If your city doesn't already, ask them to start.

Brand-name manufacturers are being pushed to recycle (more in Europe than in the U.S.). On Earth Day (April 23), companies such as HP and Dell announced recycling initiatives to collect old equipment. You might even get a few-dollars discount on your next machine if you trade in your old one.

Some fundraising groups (PTA, Boy and Girl Scouts) are starting to gather old ink and laser jet cartridges from printers for money. The office supply giant Staples great information on its Web site: (www.staples.com/products/spotlights/marketing/rfe/default.asp).



Connection coach

The meaning of life (er, storage)

Readers wrestle with the floppy question, SATA vs. PATA and a computer Catch-22.

Sure, you're network IT professionals. But the problems you solve at work are nothing like those you face at home. Here, products must be inexpensive, easy to manage and quick to implement. That's why Go-to Guys and Gals need a Go-to Guy of their own. That's me. I've fought computers for 20 years, and have published 15 books and hundreds of stories. Got a computer or network problem that's keeping you up at night? Send it to me. Here are solutions to three tough questions that recently landed in my in-box:

Traci from Boston: My company just sent me a new notebook computer that lacks a CD-ROM drive, along with a big box of software applications. How the heck do I install them?

Coach: Assuming your notebook has a network connection, you can share a CD-ROM from another computer. Use Windows sharing tools by right-clicking the CD-ROM drive in the 'My Computer' window then choosing Sharing and Security. Most applications will install this way. However, this won't help you boot the notebook in case you need to recover from a hard disk problem. For that feature and future peace of mind, get an external USB-connected CD-ROM drive. Plain CD-ROM readers cost about \$50, or splurge for an external CD-DVD read/write, do-everything drive for about \$200.

Frank from Philadelphia: Why do computers still come with floppy disk drives?

Coach: It's like your appendix — useful once, but no longer — floppy drives seem to be an anachronism. However, if you build your own computer, the only way to load special drivers during Windows installation is via floppy. Stupid but true. Maybe Microsoft will fix this oversight in

DISK DON'TS

Don't move a hard disk while it's running. Turn your PC off before moving it, and while notebook drives can handle some movement, don't dance like in the iPod commercial with notebook in hand.

Don't restart a hard drive until it has stopped completely. Give it at least 15 seconds between hitting the off switch and starting again.

CDs and DVDs might never decompose in a landfill, but dirt, scratches and fingerprints on the data side will ruin the disk. Keep them in sleeves or boxes and out of the sun.

Longhorn, meaning we'll only have to keep floppies for another two or three years. (Of course, you can always load Linux instead; it doesn't need a floppy.)

Jerry from Denver: When I took my kids to buy a new computer, the hard drive choice was between Parallel Advanced Technology Attachment or Serial Advanced Technology Attachment (my son wanted PATA, and my daughter demanded SATA). What happened to Integrated Drive Electronics (IDE) and SCSI?

Coach: More market stupidity. Standard IDE hard drives, the ones used in desktop PCs forever, have been renamed PATA drives, supposedly to help differentiate them from the newer SATA drives.

In choosing a drive, take your daughter's advice. SATA drives are much faster (they start at 150M byte/sec throughput, higher than IDE's top speed of 133M byte/sec), and use a lower voltage. Because the drives use only seven conductors rather than 40, manufacturers can replace the wide, flat, ribbon cable with a much thinner one. The connector takes much less space on the motherboard, and the connecting cable can be more than twice as long as the IDE/PATA cable. Plus, they all have a minimum of 8M-byte cache for better performance and cost only a few dollars more.

Also, new motherboards have at least two SATA plugs and most support RAID-1 disk mirroring with minimal configuration hassle. Two drives and two connectors and BIOS settings give you disk fault-tolerance. That said, SCSI drives retain a performance advantage over SATA drives, at least for now, and remain the drive of choice in servers and disk subsystems.

Alex from Dallas: Are there any user-serviceable parts inside a hard drive?

Coach: Only if you plan to turn it into a paperweight when you're finished. Otherwise, hard drives are like race cars: If you open the hood, you've lost.

Got a computer or network problem? Send stumpers to connectioncoach@nww.com.

KEITH SHAW



Off the clock

Akimbo takes on-demand content to new levels

New Internet video player works well, but where's the compelling content?

With its on-demand Internet video player, Akimbo is testing the axiom, "If you build it, they will come." Akimbo has stepped up with a good device and service model. But for it to fly, content providers need to offer something better than classic movies, music videos, documentaries and independent films. Setting up the Akimbo Player (via Ethernet or USB-enabled 802.11b adapter) and online service is easy. Convincing someone they'll want to watch Turkish TV, less so.

Akimbo delivers digital video over the Internet and into the Akimbo Player, a set-top box that connects to a TV. Like a personal video recorder, the Akimbo Player has a hard drive that can store at least 150 hours of content. The Akimbo service lets users download content on demand over a broadband connection. This is not streaming video: The content is stored on the Player's hard drive before you can watch it.

The video content comes in about 50 categories, such as animation, foreign language channels, classic movies and how-to videos. Popular channels include Turner Classic Movies, A&E, Cartoon Network, CNN, BBC (content separate from BBC America), the History Channel, National Geographic and iFilm (short film channel). Adult content is also available, but the service includes good parental controls to prevent children from accessing or downloading it.

We set up the Akimbo Player quickly and easily. There are three cables —

power, Ethernet and composite RCA — that connect to your TV's video input source. Next, we went to the Akimbo Web site to activate the service (pay for the subscription, pick a username). To download content to the device, use the Akimbo interface on the TV via the remote control.

Aside from free content, Akimbo offers premium programming, offered either as a rental (one-time charge) or as part of a channel membership (access to all premium content for a monthly fee). The service also offers subscriptions, a collection of related programs (usually free) automatically delivered to the box. Premium content ranges from 50 cents per program to \$9.99 for 30 days of adult content. Most programs cost \$2 to \$3.

Some content (such as classic movies) has an expiration date — after 30 days (or other fixed period) the content is erased. The system also will erase programs once the hard drive fills up, although users can choose to save programs that don't expire to prevent the system from deleting them.



The Akimbo Player lets users store up to 150 hours of content from places such as iFilm.

OTHER TIME-KILLERS

Matrix Online
An online game that hooks you faster than you can take one pill (\$30 per month)

Star Wars Episode III
Star Wars fan people two previous appearances

New Radio
At wish work and home



The Akimbo experience is a cross between streaming Internet video on a PC and on-demand content from a cable TV provider. Because the Player is connected to a TV, the video quality is better than on streaming video for a PC. Yet the content is not as varied as cable TV on-demand offerings. Akimbo says it doesn't compete with on-demand cable programming, but it inevitably gets compared with it. The company continues to make content partnership announcements, so there is potential for new programming.

With a \$230 player and service fees of \$10 per month (a lifetime subscription costs \$170), the providers need to show up soon with some engaging content. Just like a new video game console, success won't come from the device itself but from the content that's available. ■

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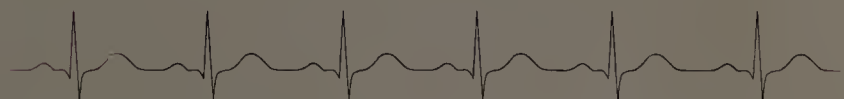
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Study: Networks to get their fill of iSCSI

■ BY DENI CONNOR

IP-based storage-area networks haven't taken off yet, but once they do, Ethernet networks will start feeling the effects.

A new IDC study finds that even limited use of the iSCSI protocol to route block-level data across IP networks could result in as much as a sixfold increase in traffic.

"iSCSI and the storage traffic it generates is going to be substantial," says Robert Gray, research president for IDC, which estimates products with iSCSI interconnects will grow from 1.3% of all disk storage system revenue this year to

more than 11% in 2008.

Gray says many organizations will be willing to live with the significant traffic increase as a trade-off for being able to use a familiar network architecture for their storage traffic. Systems exploiting iSCSI might appeal to organizations that find Fibre Channel to be overkill, too expensive or hard to learn, the study says.

He says IT can take actions, such as segmenting networks, to keep iSCSI traffic from overwhelming other traffic.

"End users already plan to have an isolated storage network," Gray says. "They have two reasons for doing that: security concerns and they don't want to impact the performance of their applications."

The characteristics of storage traffic make it an excellent candidate for network segmentation, Gray says. Whereas other network traffic may have to cross numerous hops to reach its destination, storage traffic is a "two-hop experience — it goes

from the server to the switch and then to the storage device."

Building a network that supports jumbo frames also can ease the transition to iSCSI, says Ronald Godine, manager of information systems operations for Royal Appliance. The Glenwillow, Ohio, company has installed LeftHand Networks' iSCSI-based Network Storage Modules to store data from Microsoft Exchange, a non-transactional Oracle database, plus Windows and Unix file and print services.

"When you can transmit a 9,000-byte packet vs. a 1,500-byte packet, that can make a big difference in efficiency," Godine says in comparing jumbo frames with typical Ethernet traffic. "We are making sure that jumbo frames are supported in our entire network backbone."

Royal Appliance has moved switches that don't support jumbo frames to the edge of its network.

Godine also recommends using Ethernet

link aggregation, which binds iSCSI connections and supports failover.

Ken Walters, senior director of enterprise platforms for the Public Broadcasting Service in Alexandria, Va., chose Stonefly's iSCSI Storage Concentrator to connect servers to storage arrays. He runs iSCSI on a separate network segment.

"My experience is that I use less of the capacity of the iSCSI network than I expected," he says. "Most servers are not heavy lifters — they aren't doing a lot of heavy I/O at the same time."

The servers, which run Exchange and his network's Web logs, have not yet experienced any performance problems, he says.

Walters, who will be moving his SQL Server environment to iSCSI next year, says no one should consider using the technology on anything slower than Gigabit Ethernet, which he says compares favorably to Fibre Channel in terms of error rates. ■

Short Takes

■ **HP** is putting the finishing touches on an updated release of its HP-UX operating system that will add virtual partitioning capabilities to the company's Itanium-based Integrity servers. The update will make the virtualization technology available to users of the HP 9000 server line who want to install the latest version of HP-UX. HP says the update is due in early July as a patch to Version 11i v2. The Virtual Partitions feature, also known as vPars, lets users install more than one copy of HP-UX on a computer. The upcoming release marks the first time vPars has been offered for the Integrity systems, which use Intel's Itanium 2 processors. For years, HP has included the technology in its 9000 machines, which are based on HP's PA-RISC chips.

■ **Advanced Micro Devices** last week launched its dual-core Athlon 64 processor, a week after Intel introduced a chip of its own that contains two processors on a single piece of silicon. Dual-core chips are said to offer users higher performance because tasks can be balanced between the two cores. Microsoft's Windows XP is set to take advantage of the technology, as are many applications, according to AMD. Acer, HP and the Lenovo Group showed prototypes using the new chips.

IBM scales up Xeon server

■ BY JENNIFER MEARS

IBM this month is expected to begin shipping a Xeon-based server that can scale up to 32 processors for running high-end databases and enterprise applications or to serve as a platform for server consolidation.

The eServer x460 is built using IBM's X3 Architecture, the so-called Hurricane chipset that is the result of a three-year, \$100 million development effort to bring mainframe-type reliability and virtualization capabilities to standards-based Xeon systems.

The x460 follows the introduction earlier this year of the four-processor eServer x366, IBM's first system based on the X3 architecture. Like the x366, the x460 is a 3U four-socket system, but the latter is designed to be more scalable and reliable to support heavier-duty workloads than the x366, IBM executives say.

The x460, which starts at around \$18,000 for a two-processor configuration, is priced similarly to its previous generation, the eServer x445, but provides up to a 60% performance improvement in an eight-way configuration, says Jay Bretzmann, director of IBM's eServer xSeries high-performance product division.

The x445 includes eight processors in a



IBM's x460 is a 3U server that starts at \$72,000 for a typical eight-processor configuration.

4U chassis. The x460 offers four sockets in a 3U chassis to accommodate the higher heat output of the latest 32-/64-bit Xeon chips. In addition, the design will enable users to upgrade to dual-core chips more easily, he says.

St. Paul Travelers Insurance runs VMware virtual machines on a handful of x445s but held off on buying more of those systems when it heard about the x460.

"We're looking at consolidating some of our SQL environments and we were a bit concerned about whether we could do that confidently on the 445 architecture," says Matthew Barlow, infrastructure development manager at the London firm. "Looking at [the x460,] we can certainly consolidate on it."

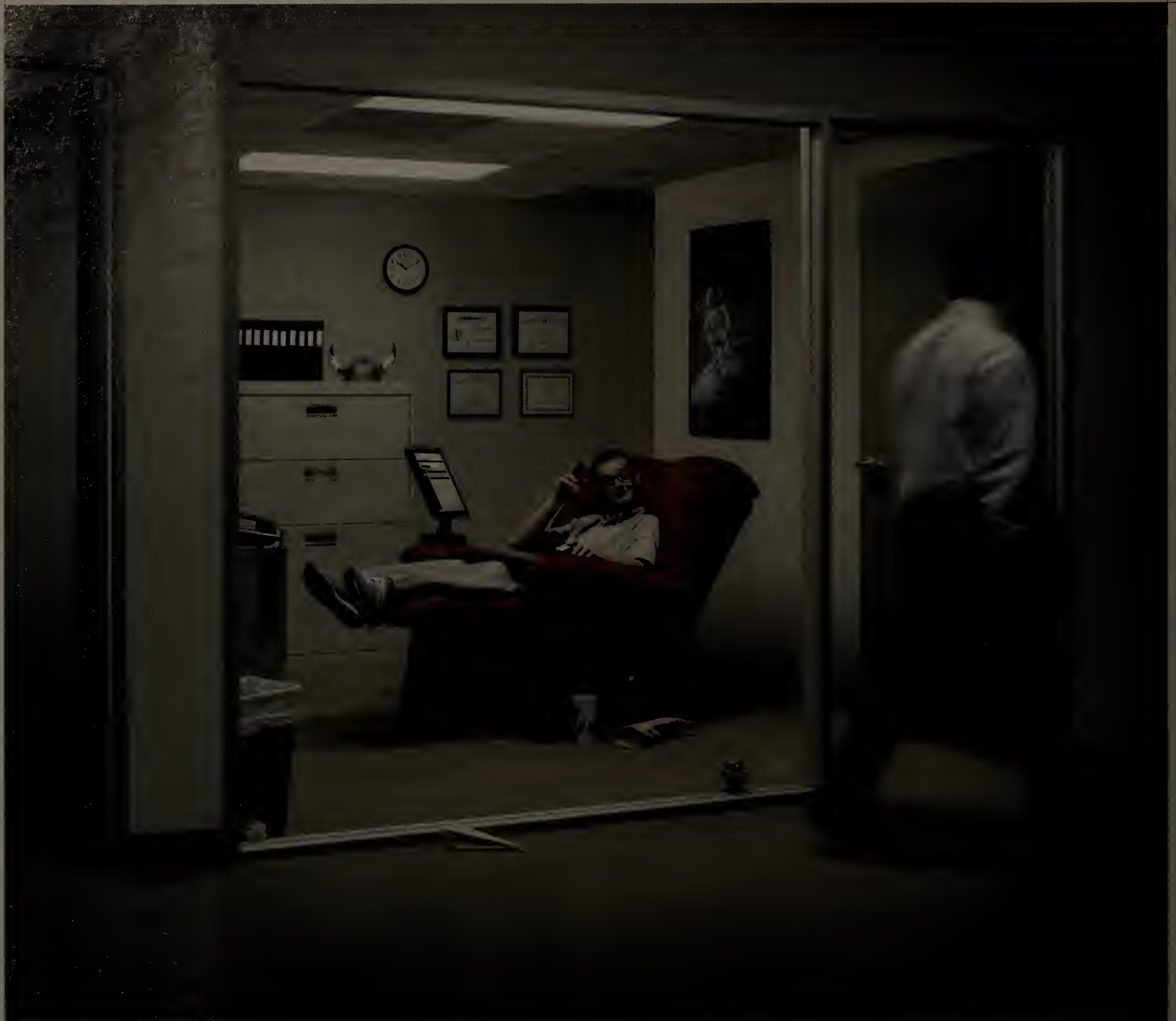
Barlow has been running the x460 in

test environments and says he is impressed by its performance. He likes the modular design of the x460, which can be linked externally to grow as large as a 32-processor system.

"We like the fact we can apply the power where we need it in the future," he says.

With the x460, IBM is targeting HP and Dell, both of which have exited the eight-way and above Xeon server market. Instead, the server makers are focusing on providing two- and four-way Xeon systems that end users can cluster for more computing power.

The x460 is expected to be available June 17 with 3.3-, 3- and 2.83-GHz Xeon chips. The high-speed chips have 8M bytes of L3 cache, and the lower-end chip has 4M bytes of L3 cache. ■



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Short Takes

■ **Management vendor Quest Software** last week said it would spend \$56.5 million in cash to acquire privately held **Vintela**, which develops software to integrate Microsoft management tools with other platforms. The acquisition brings together two companies focused on managing and extending Windows resources, most notably Active Directory. Quest plans to use Vintela's integration technology to push itself into the identity management arena, including support for cross-platform user provisioning, password management and end-user self-service applications. The company says its long-term strategy is to extend Active Directory so companies can use it to manage and secure their Unix, Linux, Macintosh and Java platforms. Quest has been acquiring companies over the past few years to build its management and Active Directory business, including Fastlane Technologies in 2000 for its directory management tools, and Aelita in 2004 for its directory and Exchange management software. The acquisition leaves Centrify as the lone independent company developing integration software focused on marrying Active Directory with other platforms.

■ **Unisys and SupplyScape** have begun a test project to track pharmaceuticals through the supply chain using RFID or bar codes with the aim of cutting down on counterfeit medicines. The "electronic drug pedigree" program will track distribution of Oxycontin, a narcotic used for moderate to severe pain made by Purdue Pharma, from the drug-maker's manufacturing facility to U.S. wholesaler H.D. Smith, the companies say. Technology for the project is under development and is expected to be deployed in July. Five states have passed laws with varying time frames for complying with implementing electronic pedigrees on drugs, and a stay placed on a federal regulation by the U.S. Food and Drug Administration will expire in the coming months, so companies also have to comply with those mandates.

Site: Lessons from Leading Users

Fireman's Fund lights up apps

■ BY JOHN FONTANA

Insurance provider Fireman's Fund Insurance hopes to set its industry ablaze with a project that will turn its mainframe applications into a set of network services that provide real-time transactions over the Web to its thousands of independent agents.

It's a heady goal in an industry where integration historically has been hamstrung by proprietary systems that cannot talk to one another both on the insurance agent front end and insurance provider back end.

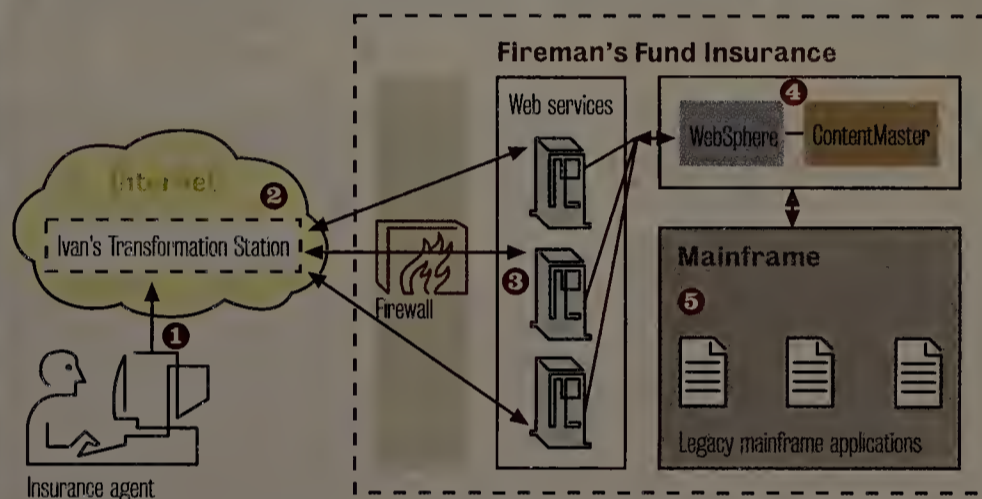
What Fireman's Fund hopes to ultimately create is a service-oriented architecture (SOA) with the functions of its multiple legacy policy administration and billing systems broken down into reusable components. Those components, which will use an industry standard called ACORD-XML as a standard data format, will be molded to the Fireman's

See Fireman's, page 26

HOW IT WORKS

Quote me

Fireman's Fund Insurance is aiming to create a service-oriented architecture that relies on ACORD-XML to help integrate its back-end systems with the front-end systems of its independent agents.



- 1 Insurance agent makes request from his legacy agent management system for property insurance price quote.
- 2 Data format is transformed at Ivan's Transformation Station into ACORD-XML.
- 3 Request is sent to the various Web services running inside Fireman's Fund that are needed to generate a quote.
- 4 WebSphere middleware orchestrates flow of information and works with Itemfield's ContentMaster to map ACORD formats to mainframe formats needed to talk to legacy quote-generation application.
- 5 Data passes back through the system and transformation engines, and returns price quote to agent's terminal.

Microsoft to unveil collaboration wares

■ BY JOHN FONTANA

Microsoft last week said it has completed development of its next generation instant messaging and real-time collaboration client, Office Communicator 2005, and plans to ship the software before the end of this month.

In addition to the instant messaging capabilities, Communicator provides users with voice, video, Web conferencing and telephony in a single desktop interface.

Office Communicator 2005 is a major overhaul of the client software for Microsoft's real-time platform. Microsoft says Office Communicator has been released to manufacturing, which means CDs are being pressed and it should be generally available soon.

Communicator is part of the Office System, which is Microsoft's centerpiece for

real-time communication and collaboration including Outlook, Communicator, Exchange, Office, SharePoint, Live Communication Server and Live Meeting.

Communicator is the front end for integrating presence information with a host of Windows applications, including those in Office System. When coupled with a PBX, the client can control calls, such as call forwarding and multi-call conferencing.

"You can look at this as an IM client, but it is really a much broader integrated communications client," says Ed Simnett, group product manager with the real-time collaboration group at Microsoft.

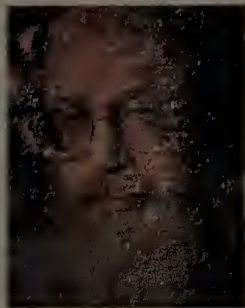
Microsoft is working with Siemens, Alcatel and Mitel to provide telephony integration.

Communicator, which runs on Windows XP and 2000 SP4, works in conjunction with Live Communications Server (LCS) 2005 and is a key link for integrating the server

with public IM services such as Yahoo, AOL and MSN. In April, Microsoft released the first service pack for LCS, including a feature called Public IM Connectivity (PIC). Communicator provides the client support for PIC, although Microsoft says the current Windows Messenger 5.1 provides limited PIC support.

In addition, users rolling out PIC will need to purchase a separate yearly license, which is priced at \$10 to \$12 per user or device. Also, the PIC service is only available to users with volume-licensing agreements. The Communicator client access license (CAL) is priced at \$31. A separate CAL is needed for telephony integration and is also priced at \$31.

Microsoft is entering a corporate IM market dominated by rival IBM/Lotus and its Lotus Instant Messaging and Web Conferencing platform. ■

'NET
INSIDERScott
Bradner

'Death of Microsoft,' compressed GIF at 11

Pundit Clayton Hallmark recently wrote a rambling rant (and a good one as anti-Microsoft rants go) with the eye-grabbing title of "BIG NEWS ON MICROSOFT: Slavery to It Is Ending." Not surprisingly, the work popped up all over the place, with a Google search getting more than 1,500 hits, so far. I do not agree with all of his rant, but there are some interesting observations in it.

It seems more than a bit callous to equate the general need to use Microsoft products with slavery, considering the history and current extent of slavery of the human-kind, and I think it takes away from the messages in Hallmark's article (www.net

workworld.com, DocFinder: 7430). That said, his basic message that Microsoft does not have a way to effectively compete in software for cheap or very cheap personal computers against open source offerings has merit. Hallmark particularly focuses on the current very low-cost computers already available from Wal-Mart (Doc Finder: 7431) and similarly priced systems from India. The Wal-Mart offerings cost less than \$200 without a monitor, plus \$40 for a copy of Linux. Hallmark says he expects that there will be systems available for even less in the future — maybe as low as \$10,0, including software.

Microsoft currently charges manufacturers between \$70 and \$83 per system for Windows but that does not include editors, etc., Hallmark says. Microsoft has a \$30 "starter kit" version of Windows for entry-level computers in developing countries, but Hallmark considers this a trap and provides links to analysis by folk

like Gartner that warn against using the kit.

Hallmark points out that there is no room for a \$75 operating system in the cost structure of a \$200 computer. Hallmark argues that the advent of these very cheap computers running Linux instead of Windows will become a real threat to Microsoft. That seems to be a bit of wishful thinking, as I doubt that super-cheap computers will eliminate the market for more upscale systems. I also doubt that enough corporations will decide to switch to Linux on their desktops to worry Microsoft.

(I won't bother mentioning Apple even though I think its offerings are better than Windows and Linux, because I doubt it will ever be a big enough player to be statistically significant.)

But I do agree that there soon may be a lot more people using non-Microsoft-running computers than Microsoft-running ones.

Hallmark seems to be part of the Microsoft-is-evil camp. That is a camp I've stayed in from time to time when thinking about some of the company's business practices, but I use Microsoft software on my Apple computer. I use the Office Suite and some other software. In fact, I'm editing this column on MS Word while listening to KHYI on Windows Media Player.

Microsoft is a very powerful player in the computer biz and I doubt it will fade away anytime soon. But Microsoft might find the going harder in some areas — which I would not find troubling.

Disclaimer: Harvard is an old (and maybe powerful) player in the education biz and learns from changing times, but it has not expressed a view on Microsoft's future trials.

Bradner is a consultant with Harvard University's University Information Systems. He can be reached at sob@sobco.com.

Site: Lessons from Leading Users

Fireman's

continued from page 25

Fund's business processes and used to create new applications to trump the competition.

The components, which the company is creating without touching any of its legacy code, can be assembled on the fly into ad hoc applications creating what Gartner has termed the service-oriented business application (SOBA). Gartner predicts by 2008 more than 70% of companies will be doing business-to-business collaboration via SOBAs.

Earlier this year, Fireman's Fund outsourced to IBM its entire IT hardware infrastructure, and signed a 10-year, \$94 million contract for IBM to provide all application development and maintenance to jump-start the SOA transformation.

"We have this monolithic environment with multiple back-end legacy systems and putting in a service-oriented architecture should help us break those monolithic applications into consumable units," says Roger Cottman, IT product director for Fireman's Fund in Novato, Calif. "It's not functionality tied to a screen, it is functionality waiting to be used."

Standards setting

One of Cottman's primary building blocks is ACORD XML, a set of standard messaging formats for executing transactions and exchanging policy information in three areas of insurance, including Fireman's Fund's property/casualty business. The standards were developed by

the Association for Cooperative Operations Research and Development (ACORD), which has spent 30 years developing insurance industry standards, first with paper forms, then with EDI, and now XML.

Fireman's Fund's motivation is twofold, Cottman says. First is to provide a standard way for more than 3,000 independent agents to interact with Fireman's Fund's network. The second is to modernize its IT infrastructure and make it more manageable and flexible without having to touch any legacy code.

In the end, Cottman hopes to lay his hands on two Holy Grails for the insurance industry: straight-through processing, where the data is touched but once; and Single Entry Multiple Company Interface (SEMCI), which lets data be keyed in once and sent to multiple recipients regardless of platform.

Fireman's Fund already has tested and deployed its first service, a billing inquiry system created from a legacy billing application. Independent agents that do business with Fireman's Fund can access the service via the Fireman's Fund Web site or they can stay in their agency management systems and submit a policy number that returns information on a customer's billing status.

The integration with the agent's legacy management systems is handled over the Web using an industry hub called Ivan's Transformation Station, which can receive data in any format and sent it out as an ACORD-formatted message.

The billing inquiry service is a simple data display mechanism and only the first step toward more sophisticated

SOBAs.

The goal is to support more complex transactions, such as loss notification or quote generation, which include error checking and transactional rules. Fireman's Fund is secretly working on two such services it would not identify. Based on ACORD XML, they will be made available to agents through the Fireman's Fund Web site and via the Ivan's integration hub. The company hopes to roll those services out in the next three to six months.

The company has built an infrastructure using tools from Webify Solutions to construct front-end interfaces to its services. In the middle is IBM's WebSphere, including the WebSphere InterChange Server, which helps map ACORD to mainframe data structures.

Dealing with COBOL

Fireman's Fund also has added Item-Field's ContentMaster to decode the complex COBOL-formatted records of its legacy applications and work alongside WICS to map those COBOL formats to ACORD-based service requests. Without ContentMaster, Cottman says, Fireman's Fund would have had to develop and maintain its own proprietary adapters to decode its COBOL, or worse — touch the COBOL code.

"We didn't want to create yet another layer of code we had to maintain," Cottman says. "The key is to have the services and then to have the orchestration around those services to deliver on our business processes. In the past we have had hard-wired applications that do Step A, then Step B and then become

monolithic applications."

Cottman says the importance of ACORD is to have a common language and common format that is supported throughout the industry.

"All the agents need to do at some point is speak ACORD," Cottman says. To help with that, he says Ivan's and a similar service from Agency Management Systems called TransactNow will provide the connection to agents' systems and transform the agents' legacy data formats into ACORD messages that can be used to talk to the Web services run by the Fireman's Fund.

"You see lots of flavors of these types of systems, lots of ways to try and achieve this," Cottman says. He says many in the industry screen scrape a Web site in order to hide the site navigation needed to get at information.

"What we are endeavoring to do is true Web services transactions that are independent of the Web site navigation. And we should be able to aggregate the services together to support new business processes. That is a SOBA," he says.

The effort and the technological advances are aimed at one thing, making Fireman's Fund, which writes \$5 billion in gross premiums per year, a more efficient provider of insurance services.

"We intend to be the easiest company in the industry to deal with; that is one reason we have modernized our systems," says John Kozero, a spokesman for Fireman's Fund.

"I don't think you will find very many companies that have a greater accent on advanced capabilities for applications and services," Kozero says. ■



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Service Providers

■ THE INTERNET ■ VPNS ■ INTEREXCHANGES AND LOCAL CARRIERS
■ WIRELESS ■ REGULATORY AFFAIRS ■ CARRIER INFRASTRUCTURE DEVELOPMENTS

Short Takes

■ **Verio**, a division of NTT Communications, now offers a Web hosting platform and managed Web hosting services that support **IPv6**, the next generation of the Internet's main communications protocol. Verio is among the first top-tier ISPs to offer a Web-enabled production application that supports IPv6. Although IPv6 was finalized a decade ago, the technology is just beginning to attract the attention of enterprise customers in the U.S. The U.S. Defense Department is one of the first and largest organizations to commit to IPv6 migration. Other early adopters include Department of Defense contractors and high-tech equipment vendors such as Cray and Juniper. Verio's IPv6-enabled Virtual Private Server and Managed Private Server let users set up Web sites with IPv6 addresses. Verio already offers IPv6 access services including native, tunneling and dual-stack gateway services between IPv4 and IPv6 traffic.

■ **Good Technology**, a competitor to mobile e-mail vendor Research In Motion, last week unveiled its first major deal with a carrier when it announced that **Cingular Wireless** will sell its service on two devices. Cingular, the largest U.S. mobile operator, will offer the GoodLink service for the PalmOne Treo 650 and the Siemens SX66 Pocket PC, a Windows Mobile Pocket PC device from Siemens AG. GoodLink continuously synchronizes a user's Microsoft Outlook e-mail and other data, allowing enterprise employees to access their e-mail, calendars, contacts, notes and lists of tasks from anywhere in Cingular's coverage area. Competitors have begun encroaching on RIM's successful service, which primarily runs on its BlackBerry devices. GoodLink offers a choice of devices and operating systems, over-the-air provisioning that lowers the cost of ownership, and a better user interface and easier device upgrades, the company says.

Q&A

AT&T's security head wears many hats



AT&T's Chief Security Information Officer Ed Amoroso recently spoke with Network World senior editors Denise Pappalardo and Ellen Messmer about his job heading up security for one of the largest telecom companies in the world, as well as the topics of patch management, intrusion-prevention systems and worm attacks.

What are your job responsibilities?

In just about every Fortune 1000 company there is somebody, somewhere worried about infrastructure security, hackers, or about laptops that aren't patched properly. That's a job function that typically falls to the chief security information officer [CSIO]. I have a fairly sizable team that works on all of the above. There are four divisions, each with about 100 people and a different set of responsibilities.

What are some key issues your team addresses?

Because our business is networking, the infrastructure we protect is pretty large. We have a lot of IP networking, circuit switching, Layer 2 frame relay, managed services and outsourcing that all comprise the infrastructure that we need to protect. When a router vendor puts out a patch some users might say, 'Well, we don't have to worry about that one.' We rarely have that experience. Every problem, every issue, every patch, they all have to be attended to.

Are you also responsible for development of AT&T's security service offerings?

That's the second piece, cybersecurity, and it's embedded in our world. The concept of providing security services and integrating them and bundling them with our telecom, managed and professional services we offer is pretty obvious. It's a very nice sort of integration because in some sense I wear the cap of not just providing the service, but I'm also of a pretty typical buyer. I can tell in 3 seconds whether something that we're considering or proposing is worth bothering with because I know darn well if it's going to help reduce the burden on my budget or if it's going to help me sleep better at night. Sometimes I watch service announcements come out and I say, 'Gosh, what must they be thinking?'

Can you give us an example?

They are not always product announcements. One idea that we saw was the idea that when a spam comes out, you spam the spammer. That's a notion that has come out of universities for a long time.

Our feeling is we have to stop spam. We need to clean up the network. That's something we would look at and say, 'Wait a minute, what if my systems are hacked and I'm spamming, are you saying you're going to chuck spam back at me?' That's an example of something any CSIO would look at in 1 second and say, 'Ugh, I hate that.'

Which patch management system do you use?

We use many. We can certainly reduce our expenses by having one tool in our infrastructure. But we tend to like to have a couple or a few in the security business because we have customers using many. When I'm engaging with a customer I prefer having experience with whatever tool they are using than to say I didn't pick that one.

Do you see any alternatives to traditional patch management?

First off, as a software engineer with a PhD in computer science, as a software engineering professor, I have been in and around software my whole life. For the record, software should be correct. Let's not lose sight of the fact that patching means we're fixing somebody's bugs. So we should preface everything by saying that that is an untenable situation. ... I'm encouraged by Microsoft's Trusted Computing Initiative. They are headed in the right direction.

What's your view on IPSs?

We actually sit with a 24-7 ops team in our Global Network Operations Center where we collect data for our threat management system, Aurora. Aurora is essentially a huge database that collects firewall and IPS logs, net flows from our routers, information from our honeypots and all sorts of different networks in and around AT&T. We sit 24-7 taking actions on alerts coming in, and many of the alerts show a source IP that appears to be scanning. My team gets in touch with that individual, because we have a look-up tool and know exactly what it is. A lot of times it's not something that we want to take off the network.

IPS automates the whole thing and takes you off the network. I'm not willing to go there just yet because I don't trust the accuracy of IPS picking up the condition properly. Maybe some businesses can stand that, but a lot can't. I do know CSIOs are running intrusion prevention in certain cases, but the vast overwhelming majority are testing it or they are running the IPS in passive mode.

Where does the responsibility and liability lie when you have a customer that didn't patch their Web server? Who is responsible?

It all comes down to the contract. We have different categories: low-rent, medium-rent and high-rent districts that range from basic collocation to fully managed Web hosting services. If someone in the cage next door is getting pounded that should not affect you. We go to great lengths to make sure we are carefully monitoring and load balancing so if someone is getting hit pretty good it doesn't take the whole LAN down. And that's easy to do with [virtual] LANs and rate limiting.

Speaking of attacks, we haven't seen much in terms of a big worm attack in a while.

We haven't seen a worm attack in a while, but let me give you advice. Never, ever, ever confuse a quiet period with improved security. The fact we haven't seen one is completely irrelevant. It's not that everyone has gotten better. Worms are very simple to write. It's just no one has written one, that's why we haven't seen it. ■

Special Focus

ETHERNET SERVICES: Better bandwidth, lower costs.

Business market stoked for Ethernet services

■ BY JIM DUFFY

There might be no hotter data service now than Ethernet. The worldwide market for Ethernet services was \$2.5 billion in 2004 and is expected to more than double this year, according to Infonetics Research. From there, Ethernet service revenue is expected to jump another 276% by 2009 to \$22.2 billion.

Many billows are stoking this fire.

On the customer side, companies are hungry for more bandwidth and looking to reduce WAN costs. Ethernet offers a way to do both because of its bandwidth capacities and relatively inexpensive prices per bit.

On the service provider side, carriers also are looking for ways to connect their various sites with higher bandwidths at an inexpensive price per bit, and Gigabit Ethernet point-to-point wholesale services meet this demand.

On the equipment side, carrier-class improvements have been made to Ethernet products that are enabling service providers to offer new Ethernet services, including those with QoS and service-level agreements. These are usually the chief selling points of the traditional private line, frame relay and ATM services that they are now beginning to replace, Infonetics says.

According to Vertical Systems Group, the top five sources of Ethernet service ports based on enterprise customer installations are:

- T-1 Internet access, the leading source of Ethernet ports because of ease of service migration coupled with demand for higher speed connections to the Internet.
- Bandwidth-hungry new or "greenfield" applications.

“When we did have troubles they were always tough to pin down. Ethernet is easier to troubleshoot.”

John McFadden
CIO, Loyola University

- Migration from ATM ports at rates of T3 and above.
- Migration from site-to-site dedicated IP VPNs.
- Conversions of T-1 frame relay ports.

Combined, these five sources represent 77% of the U.S. Ethernet port base in 2004, according to Vertical. This type of demand is prompting all major carriers to morph their traditional Transparent LAN Services (TLS) into more flexible, variable and reliable Ethernet services. It's even igniting a resurgence in previously bankrupt service providers such as Yipes Enterprise Services. Yipes received \$24 million in new funding two months ago, bringing the total to \$94 million in what it has raised since emerging from bankruptcy three years ago.

There are several flavors of Ethernet service. Ethernet is essentially an application on top of an existing transmission technology, such as SONET or leased lines. It is also available on pre-standard technologies such as Resilient Packet Ring, or in a network layer technology

like IP/MPLS. Ethernet also can be offered as a stand-alone service on copper or fiber, or delivered on a wavelength over Dense Wavelength Division Multiplexing (DWDM) services.

Ethernet also is offered as a switched service shared by many companies over a public network, or a dedicated service for corporations desiring an exclusive facility.

Loyola University in Maryland uses a switched Ethernet service from Verizon to tie in remote campuses and give them all of the technical resources available at the main campus in Baltimore. The school has three remote campuses, between two and 20 miles away from the main campus, in Timonium, Columbia and Belvedere Square.

The school picked TLS because it was an extension of Loyola's Ethernet infrastructure.

"Our fundamental strategy is we want one campus with multiple locations," says John McFadden, CIO and assistant vice president of technology services at Loyola.

Loyola had also "maxed out" the DS-3 ATM links between campuses and experienced some reliability issues with ATM, McFadden says.

"When we did have troubles they were always tough to pin down," he says. "Ethernet is easier to troubleshoot."

QoS made easier

Hacienda La Puente, a large school district in Los Angeles County, agrees. The school district is cutting over to 1G bit/sec Ethernet from OC-3 ATM on July 1 to, among other things, ease management of QoS for voice and video delivery to 2,700 stations across 42 sites.

"In looking at deploying different virtual LANs across the entire district it's a lot easier than having to set up and map an [ATM Emulated-] LAN, or set up switched virtual circuits, and then having to go to [permanent virtual circuits]," says Michael Droe, the school district's CTO. "It just gets to be more trouble than it's worth sometimes."

Ethernet will also simplify multicast video, Droe says.

"On ATM, LANE [LAN Emulation] doesn't really support multicast. So to really do anything with multicast you have to start going into PVC configurations and set up your network aside from LANE. It was just too much to completely mesh a 42-site network."

The price is also right. Droe says going from 155M bit/sec OC-3 ATM to 1G bit/sec Ethernet — six and a half times the bandwidth — only costs "a couple hundred extra dollars" a month.

Loyola upgraded its inter-campus links to 100M bit/sec for the same price as 45M bit/sec ATM, about \$5,000 per month, McFadden says. Verizon says it can substitute 1.5M bit/sec inter-LATA frame relay DS-1s — which cost \$400 to \$500 per month — to 10M bit/sec Ethernet for \$900 to \$1,000 per month.

That's seven times the bandwidth for twice the price, and one reason why Verizon saw 50% growth in the number of Ethernet ports in the first quarter and a 60% to 70% growth in Ethernet revenue, says Michael Tighe, Ethernet product marketing manager at the carrier.

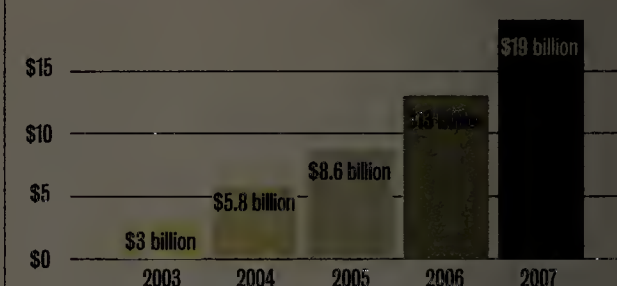
"We're very much leading [data services marketing] with the Ethernet portfolio and very active in going out and presenting it to our customers," Tighe says.

The first quarter was the first time demand for 100M

In the Ether

The worldwide market for Ethernet services is expected to reach nearly \$20 billion by 2007.

Yearly revenue for Ethernet services



SOURCE: METRO ETHERNET FORUM

bit/sec connections outpaced that for 10M bit/sec.

Verizon offers various flavors of Ethernet: TLS, which it now calls E-LAN in keeping with Metro Ethernet Forum (MEF) definitions; E-Line, which is a dedicated private line service formerly known as Verizon Optical Networking; and Ethernet Virtual Private Line (E-VPL), a switched service that maps an Ethernet virtual connection from a host site to a branch office.

Verizon also offers Ethernet as an application on its SONET rings — a service it calls Enhanced Dedicated SONET Ring (EDSR) — and can carry Ethernet on a dedicated wavelength over its DWDM network.

Companies needing site-to-site connectivity usually opt for E-LAN or E-VPL, Tighe says. Those needing data center-to-data center connectivity across miles for business continuity and disaster-recovery applications, or to connect two EDSR rings together usually opt for E-Line, he says.

The most popular EPL interface combination is 1G bit/sec Ethernet with only 150M bit/sec turned up, Tighe says. That allows users to gradually scale up their bandwidth to a full 1G bit/sec as required, he says.

Ethernet-over-DWDM appeals to those requiring point-to-point 10G bit/sec connections carrying both Ethernet and private line services, Tighe says.

Standardization behind momentum

Ethernet's appeal has been augmented by MEF specifications to make the enterprise LAN technology "carrier-grade." Two months ago, the MEF unveiled its definitions for Ethernet scalability, protection, "hard" QoS guarantees, TDM support and service management.

"Carrier Ethernet will be able to support more of a variety of services, including some of the legacy services" through techniques such as MPLS, Draft and Dry Martini, and pseudowire, says Nan Chen, MEF president. "That's enabled the growth of Ethernet services, both from a business as well as a residential perspective."

Pseudowire emulates physical connections using a service ID label that defines the traffic type and QoS parameters. Draft Martini is a specification for integrating Layer 2 services onto an MPLS core, and Dry Martini extends pseudowire to work over any infrastructure, such as SONET and ATM — not just MPLS.

The MEF will be demonstrating Carrier Ethernet at this week's Supercomm 2005 conference in Chicago. ■

EYE ON THE CARRIERS

Johna Till Johnson



Rethinking legal privacy framework: A call to arms

The authors conclude that the courts and Congress are arriving at a crossroads: Either they can try to retrofit the new computer and information technology pegs into the old telephone policy holes, or we can col-

lectively agree to rethink the meaning of privacy in the 21st century.

I'm voting for the latter. But the courts and legislators can't do it alone. They need to hear from us.

Johnson is president and chief research officer at Nemertes Research, an independent technology research firm. She can be reached at johna@nemertes.com.

I noted recently that we need to rethink the broader public policy on information stewardship in the context of 21st century technology.

That's no small task. It affects everything from our understanding of the Fourth and First Amendments to local and national law-enforcement and anti-terrorism initiatives.

This might sound a wee bit "out of scope" for IT executives. But as the ones who best understand the potentials and pitfalls of technology, we have an obligation to speak up as we approach a policy crossroads.

The devil's in the details. For example, in a widely quoted piece that appeared in last month's *Communications of the ACM*, security guru Bruce Schneier warned, "The police need a warrant to read the e-mail on your computer, but they don't need one to read it off the back-up tapes at your ISP."

Schneier is making a very specific point, and his comment is 100% correct. But a casual reader might mistakenly arrive at the erroneous conclusion that the police can walk in off the street and start reading your e-mail.

Not quite. In the case of *U.S. vs. Lifshitz*, courts ruled the government can gain access to stored e-mails by warrant, court order or subpoena. In other words, the cops don't need an actual warrant, but they do need either a subpoena or a court order. The distinction's important because it's much harder to get a warrant than a subpoena. Warrants require probable cause; subpoenas don't.

The bottom line is it's not as if the cops can walk in off the street and start rifling through your e-mail. But the barriers to government surveillance are much lower than you might have thought.

It gets worse. The courts have made confusing and increasingly contradictory distinctions about which communications are protected and which aren't. There's the distinction between "temporarily" stored e-mails (on a server) vs. backed-up e-mails (on tape drives), with lower standards for protection of the latter. Ditto stored "content" — the text body of a message — and less-protected "records and information" — the e-mail, IP and geographical addresses of the senders and recipients. Finally, there's the looming question of VoIP. Wiretapping laws govern "wire" transmissions (voice calls) but not e-mail. But adding voice to an e-mail changes the e-mail from an electronic communication to a more stringently protected voice communication.

There's a great rundown of these issues in a story in *American Bar Association* magazine (see www.networkworld.com, Doc-Finder: 7429).

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 **PACKETEEER**

Technology Update

■ AN INSIDE LOOK AT TECHNOLOGIES AND STANDARDS

SMI-S 1.1 simplifies storage mgmt.

■ BY RAY DUNN

When it comes to storage environments, management, complexity, interoperability and serviceability are among the top challenges IT professionals face.

Answering this call, the Storage Networking Industry Association (SNIA) recently released Version 1.1 of its Storage Management Initiative Specification (SMI-S).

SMI-S helps maintain and protect information in all the electronic forms represented by the various types of storage products.

By standardizing the communications that occur to provide management services to the storage infrastructure, SMI-S lets IT administrators use a single application for many operations that traditionally required separate management products in a storage network.

SMI-S 1.1 enables enhanced services in the areas of configuration, provisioning and trend reporting, event management, security and data protection.

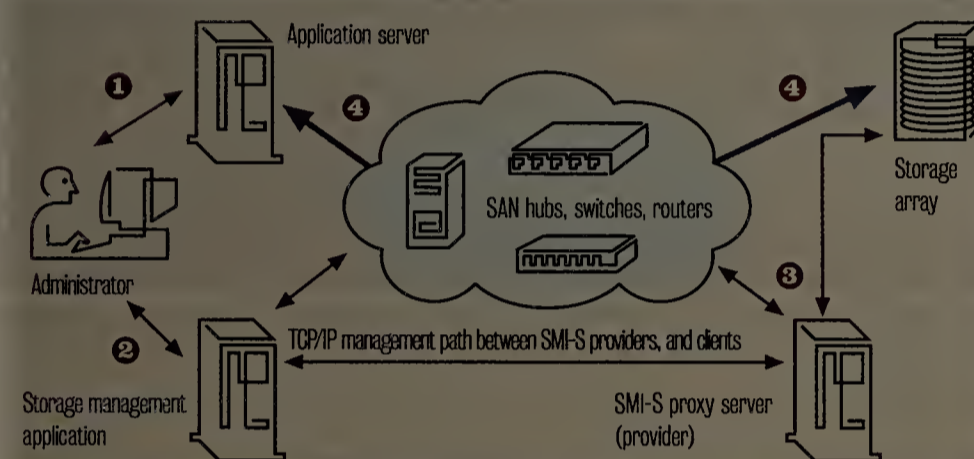
For example, if a user wants to provision a new logical unit number (LUN), he would request storage for the application. He would supply the requirements for QoS and data protection. Then, the SMI-S Version 1.1 storage management would determine the availability of storage to meet these requirements. The management application request would go over a TCP/IP link to an SMI-S hardware device for information, which would be maintained in the SMI-S proxy server acting in the role of a Common Information Model Object Manager (CIMOM).

CIMOM would be able to provide information from several devices back to a management client. Lastly, the user would

■ HOW IT WORKS

SMI-S 1.1

The Storage Management Initiative Specification 1.1 lets administrators use one application for many of the operations that traditionally required separate management products. In this example, an administrator provisions a logical unit number (LUN).



- 1 Administrator who wants to request storage for an application logs on to a storage management application and identifies the requirements for QoS, data protection and so forth.
- 2 Administrator consults the management application to determine the availability of storage to meet requirements. App directs request to the SMI-S provider for information, which is maintained in the SMI-S proxy server acting in the role of a Common Information Model Object Manager (CIMOM).
- 3 The CIMOM provides information about the devices back to the management client in the form of an XML document.
- 4 The administrator selects the appropriate LUN through the storage management application, which then configures the data path from the application server through the SAN to storage array. This step results in the correct sequence of actions that will assign the LUN to the application.

select a LUN through the storage management application, which then would perform a set of actions to assign a LUN to the application.

Here are some highlights of Version 1.1:

- Network-attached storage: Version 1.1 gives users with the ability to create and manage file shares, and monitor state changes.

- Host volume management: The new version enables storage-pool creation and monitoring — ultimately allowing for initialization of volumes from storage pools and mapping a QoS such as the type of redundancy (RAID level) and other settings.

- Performance monitoring: The ability to conduct I/O performance reporting and

monitoring across heterogeneous devices.

- Health and fault management: Normalize the reporting of problems with storage resources across a storage-area network, including identifying problems with devices and reporting appropriate faults and error messages.

- iSCSI: Allows the discovery and asset reporting of storage devices on iSCSI protocol storage networks.

- Policy management: Establishes rules-based automated operations across devices from different manufacturers.

- Security enhancements: Offers role-based authentication and identity management.

Using products without SMI-S, IT managers must make careful choices because of the proprietary nature of how these products would be managed. The combinations of products that work together might be extremely limited. Storage resource management software might require the need to place agents throughout an environment to gather and report information on how storage consumption was happening.

With SMI-S, the management information can be maintained in the device or in a central proxy CIMOM that consolidates information from many types of devices into a single instance of the common object model. SMI-S Version 1.1 products will be available during the coming year.

Dunn is an industry standards marketing manager with Sun, a member of the SNIA board of directors and an officer with the Storage Management Forum. He can be reached at Raymond.Dunn@Sun.com.

Ask Dr. Internet

By Steve Blass

We want to connect a desktop database client from a Windows PC directly to a MySQL database server. The server is configured to only accept connections from a specified Web server that uses a shell account that logs on via Secure Shell (SSH). What can we do?

With SSH port forwarding you can connect directly to the database server by tunneling through your shell account on the Web server. You can

even read and write the database tables using Microsoft Access and the MyODBC connector from www.mysql.com through the SSH tunnel. To establish an SSH tunnel with a command line SSH client, type "ssh -l loginID -L 3306:mysql-host:3306 shellhost". This logs into the shell account host as loginID, while connecting local Port 3306 on your desktop to the mysql host at Port 3306 through the SSH connection via the shell host. Most graphical SSH clients let you

establish tunnels through configuration or preference options, so look for the Tunnel or Port Forwarding settings and establish the same kind of connections. After you establish connections the first time, make sure the tunnel is set up and connected before you talk to the database server.

Blass, a network architect at Change@Work in Houston, can be reached at drinternet@changeatwork.com.

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Neat gadgets and Linux clusters

Neat Gadget Department: In January we discussed a Wi-Fi hot-spot detector that we thought was pretty good. A more expensive alternative, the Digital Hotspotter Model #HS10 from Canary Wireless, provides more information about a hot spot for about double the price (\$60 direct).

The HS10 is a small (roughly 2.5 by 2 by 1 inches) lightweight box with a small LCD display. Press the button on the front and the HS10 scans for 802.11b and 802.11g networks and reports on the name being broadcast, the signal strength (shown as zero to four bars), whether the network is encrypted (both Wired Equivalent Privacy and Wi-Fi Protected Access are detected), and which channel is being used.

The HS10 works well, but a few access points from various manufacturers aren't detected reliably or at all (see Canary's Troubleshooting forum, www.networkworld.com, DocFinder: 7432).

According to Canary: "Detection of all

existing access points cannot be accomplished without substantially more expensive hardware. The current device attempts to strike a balance that provides a useful functionality at a reasonable price." (But as one forum contributor pointed out, a full-blown wireless PC card is not much more if not the same price as the HS10.)

We suspect that most inexpensive Wi-Fi detectors suffer from the same limitations or more. But given how many access points these devices can detect, they still are useful and it appears from online user comments that the HS10 is better than most.

Our second neat gadget is a personal privacy tool kit for Windows 2000 and XP users called Stealth Surfer II (DocFinder: 7433).

Stealth Surfer II is said to support secure, anonymous surfing and e-mail, and it makes for a clever and reasonably simple solution for portable privacy.

Built on a USB drive with some fancy security electronics, it looks like a vanilla USB storage device. Once you plug in the Stealth Surfer II (it is USB 2.0 compatible) and navigate to it in Windows Explorer, you'll find only one application that, when you execute it, brings up a logon screen.

With the right password the drive is magically transformed so that you now can see

the files and folders on it. These consist of a set of utilities for secure browsing, password and online account management, and e-mail.

Pre-installed on the drive are:

- Firefox browser (DocFinder: 7434).
- Anonymizer, an anonymous surfing router. (DocFinder: 7435).
- RoboForm, form-filling automator with secure user account management (DocFinder: 7436).
- Thunderbird, an open source e-mail client (DocFinder: 7437).
- Hushmail, a PGP-compatible secure free e-mail (DocFinder: 7438).

Getting the tools running is easy, and if you already use any of them you can copy your data onto the USB drive. Once you're logged on, all browser and e-mail service requests are handled by the applications on the Stealth Surfer. Logging off from Stealth Surfer services requires double clicking on an icon in the Windows system tray.

The device is fast and reliable and, with pricing starting at \$100 for a 128M-byte Stealth Surfer II, an excellent value.

Last week we started discussing Linux clusters after delving into a new book, *The Linux Enterprise Cluster* by Karl Kopper, which is all about creating high-availabil-

ity clusters of inexpensive computers to provide enterprise-class resources and services.

High-availability clusters are different from high-performance computing (HPC) clusters, although the latter can be enhanced to incorporate the former. The most famous example of an HPC is Beowulf.

Beowulf clusters are described as "scalable performance clusters based on commodity hardware, on a private system network, with open source software [Linux] infrastructure . . . as simple as two networked computers each running Linux and sharing a file system, or as complex as 1,024 nodes with a high-speed, low-latency network."

So back to *The Linux Enterprise Cluster*. This tome explores the key technologies that underpin building real enterprise-level Linux clusters.

One of the technologies we mentioned was Heartbeat, which is the backbone of failover handling from a failed primary server to a back-up server. How it works is . . . what? We're out of space!

Next week, Heartbeat and more. Until then, show us yer pulse at gearhead@gibbs.com. Defib at Gearblog (www.networkworld.com/weblogs/gearblog).



Cool Tools

Quick takes
on high-tech toys
By Keith Shaw

You might grin a little, you might groan a little, when someone asks for help installing the Axentra Net-Box. We certainly did both when we tried it on our network.

The Net-Box is an all-in-one server/router/firewall that can become the core of a home network. In addition, the Linux-based device provides Web and e-mail servers. The grins came when we realized we could host our own Web site and e-mail server without having to convert an old computer or buy a Windows-based server. An Axentra partnership with TZO.com gives Net-Box owners a domain name free for a year.

But the groans came from some installation headaches and the realization that our favorite parts of the Net-Box, the Web server and e-mail server, were half-cooked applications that frustrated more than pleased us.

Our first sign of trouble came in a warning on the "getting started" card: If our current network had a router, we needed to disconnect it. Then we looked on the back of the Net-Box; there was only one LAN and one WAN port. For more complex network setups the card suggested we attach a hub or a switch to the network.

Because we had a wireless router, this meant that the four Ethernet ports on our router (attaching a desktop, our work notebook, the network-attached storage [NAS] device and the power-line adapter) would have to be abandoned.

We discovered we could use the router if we disabled its DHCP server. We still needed to sacrifice one of the ports to

Net-Box is ambitious, but audience is unclear

connect the Net-Box to the router, so we took a NAS box off the network. We would have preferred a system that provided multiple LAN ports on its own box or worked in a topology in which the wireless router could remain the network's central core.

Once we disabled the router's DHCP server, we were able to configure the Net-Box. A set-up wizard let us create administration accounts and connect to our ISP for a WAN address, and gave us a domain name. Once connected, the system took us to the Web-based Administration Center, where we set up other security settings (IP filtering, content filtering and others), and wireless settings.

We were disappointed by the wireless features, which only supported 40- and 104-bit Wired Equivalent Privacy. However, because we left our wireless router on the network, our current Wi-Fi Protected Access (WPA)-enabled router could handle all of the wireless clients and still connect to the Net-Box.

The Net-Box Applications page includes portal applications (including a calendar, address book and Weblog), a Web-based e-mail reader and space for posting photos or other Web pages to the domain.

Once the Net-Box becomes the center of your network,



The Net-Box got high marks in its ability to let users host their own Web site and e-mail server but low marks for its half-cooked applications.

you also can store your digital files (photos, music, videos or regular data) on its 80G-byte hard drive. If you need additional space, up to

four USB hard drives can attach to the Net-Box, or you can upgrade to the H-90 Net-Box, which has 160G bytes of storage.

We were disappointed in the Web server application, which provides a rudimentary HTML editor to create pages, but inserting photos and other artwork onto a Web page involves moving photos into specific user folders through a Web-based wizard. If you plan to build a Web site, use a different HTML editor or publishing system.

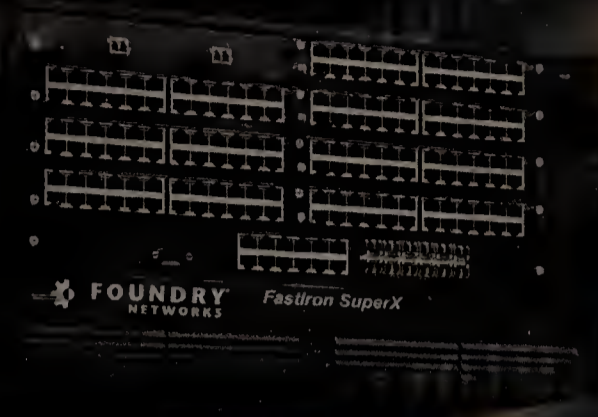
We couldn't figure out the Net-Box's intended market. Consumers with home networks get many of the same features (Internet sharing, DHCP, firewalls and file storage) from a router and NAS box. The ability to

host your own Web server and e-mail domain was compelling, but could be easily matched by a Web host. Anyone with a small business or small office/home office likely would get these features from an integrator, or just run a Windows-based Web server or e-mail server.

Shaw can be reached at kshaw@nww.com.

■ Check out this week's *Network Life* supplement, beginning after page 16 for more home networking reviews and strategies.

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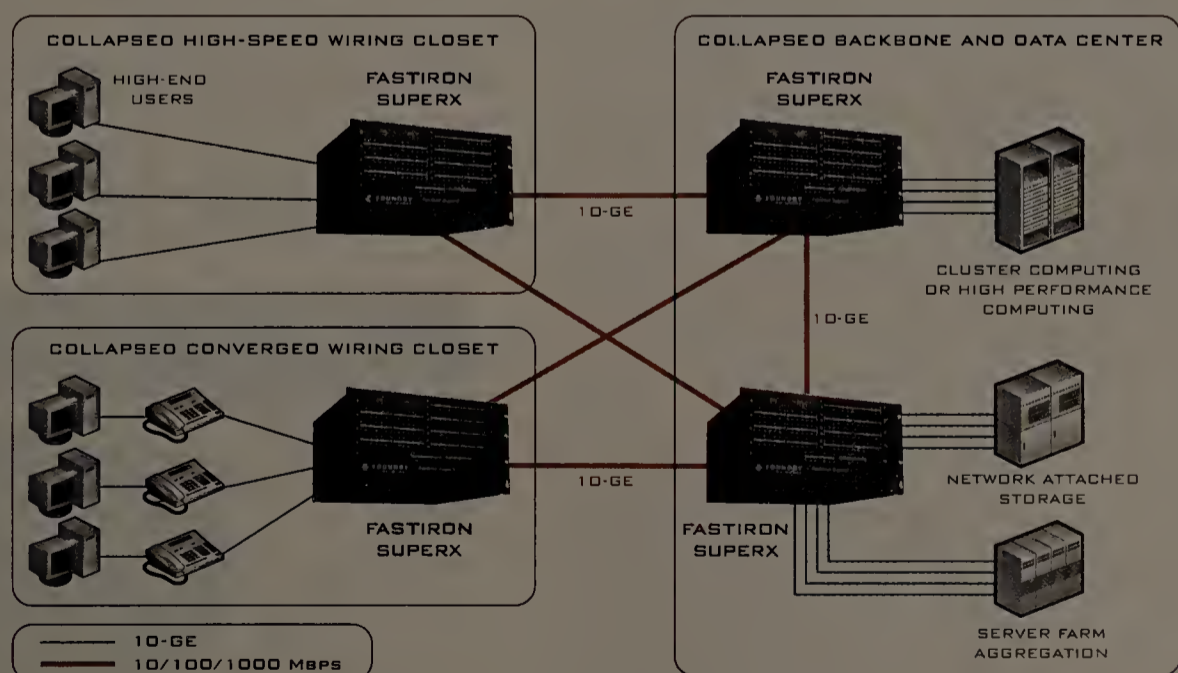
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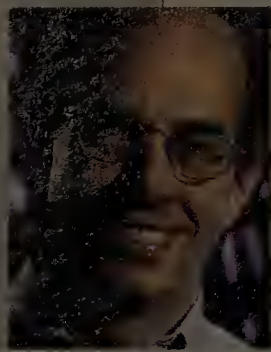
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ON TECHNOLOGY

John Dix

Carr's latest effort to stir the IT pot

Nicholas Carr is back, following up his infamous "IT doesn't matter" essay in the *Harvard Business Review* with a piece in the *MIT Sloan Management Review* titled "The end of corporate computing."

A common theme in both is that the commoditization of IT has relegated its role to that of utility, much like electricity. This development, he concludes in the first article, means IT is no longer strategic, while in the new piece he argues that utility IT services are best provided by large centralized companies vs. tackled in-house.

It is essentially an outsource argument, and he makes some valid points.

When electricity was not widely available companies built their own generation facilities, Carr says. But when it became possible to deliver power over greater distances, entrepreneurs realized centralized production provided economies of scale and serving multiple customers made it possible to "achieve higher capacity-utilization rates."

IT is ripe for the same metamorphosis, he says, because companies today have large, overbuilt data centers constructed with commodity parts, supporting similar applications.

"The history of commerce has repeatedly shown that redundant investment and fragmented capacity provide strong incentives for centralizing supply," Carr writes.

There is no doubting that outsourcing has an important role to play, and likely an increasing one. Carr is right to conclude that the convergence of virtualization technology, grid computing and Web services is potent stuff that will change the face of computing, making it possible to develop new applications faster, scale environments to meet demand and maximize hardware utilization rates.

But he makes the same mistake in this piece as he did in the first in assuming kilowatts are the same as kilobytes, which colors his conclusion.

Generators were core assets when electricity was scarce or spotty. But when the supply became reliable and cheap, the decision to outsource was simple. Electricity is electricity. Ask a CEO if data is simply data, or ever will be.

What's more, you can't combine 100 volts here and 100 volts there to get 300 volts. With IT, the whole can be greater than the sum of the parts. Piecing together this piece of data with information culled from three other sources can mean real business value, and you don't want to be standing in line waiting for your "utility" to add it up for you.

Carr gets it partially right. Outsourcing is here to stay and is one of the important ways companies will augment internal efforts, but it won't lead to the end of corporate computing.

—John Dix
Editor in chief
jdix@nww.com

Why VoIP?

In the story "States want VoIP, lack infrastructure" (DocFinder: 7425), Daniel Corcoran of New York's Office for Technology states, "We're getting enormous pressure to do VoIP and we keep asking, 'Why?'" If your PBX is digital and trunks to the local telco by primary rate ISDN, you have all the services available from VoIP without the overhead tax or the Internet's security problems.

Another question one might ask before installing VoIP is: "How much time, money and effort do we spend securing the regular PBX and the devices [servers and PCs] that connect to the Internet?" Then ask yourself again, "Why?"

Stephen Wyman
Network specialist
Texas Department of Transportation
Austin, Texas

Always a good read

I always look forward to reading Johna Till Johnson's column. I count on Johnson to brief me on the issues facing the telecom industry. I find her column insightful, informative and always upbeat.

What has contributed to the downturn in the high-tech sector is the cynicism of those in the industry. High-tech allows companies to keep a minimum of inventory; it allows for tremendous efficiencies in the product distribution system and on the assembly line, not to mention the reduction of overall production costs. This allows for more affordable products, which translates into more disposable income for everyone.

A successful company is a matter of good design: It all boils down to that. And a well-designed company

E-mail letters to jdix@nww.com or send them to John Dix, editor in chief, Network World, 118 Turnpike Road, Southborough, MA 01772. Please include phone number and address for verification.

has a good network, inside and out.

Kenneth Selin
President
K+
Ottawa, Canada

Doubtful dividends

Regarding your editorial, "AT&T: Investments paying dividends" (DocFinder: 7426): I agree that many AT&T customer-facing systems have been consolidated. . . even if the network now resembles a Byzantine maze.

AT&T's internal systems still are experiencing issues, as well. My employer (a longtime AT&T customer) signed a contract almost six months ago for local and long-distance, but AT&T still hasn't managed to get the rate changes reflected on invoices, nor consolidate two invoices into one.

Concept of One and Concept of Zero, indeed — one terrible Web site and zero ability to deliver correct invoices. All AT&T needs is some bad customer service to round things out. . . . Oh wait, that's where SBC comes in.

Toby Meehan
Milwaukee

IPv6 constituents

Regarding Chuck Yoke's column, "So where is all the IPv6?" (www.networkworld.com, DocFinder: 7424) While I agree with most of Yoke's comments, he is ignoring two important constituencies: Government/military organizations that require IPv6 capability, and foreign countries unhappy that the U.S. owns the overwhelming majority of IP addresses. These could be considered two important market drivers for IPv6 adoption.

Tom Price
Vice president
The Bernard Group
Austin, Texas



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DocFinder: 7423





DEMO INSIGHTS

Chris Shipley

If you've attended the Demo Conference or follow the DemoLetter blog (www.networkworld.com, DocFinder: 7428), you know that I am a huge advocate of the move to social computing. In very broad strokes, social computing puts people at the center of leveraged technology to enable individuals to collaborate, communicate and transact. Social computing takes many forms.

At its most basic, e-mail is social software. At its extreme, so-called social networks such as Friendster and LinkedIn depend on the interactions of members. Marketplaces such as eBay are fundamentally social. Blogs are a form of social media, and enable readers to become engaged with content, commenting on and referring to postings.

At the center of these software products and services are reputation systems, either explicit or implicit. A reputation system is a means of understanding who someone is and how that person behaves within the community. In e-mail, reputation systems are implicit: Do I know the sender? In eBay, the reputation is explicit: Buyers and sellers rate each other. Social networks use a blend of the two. In LinkedIn, you are known by the company you keep and what this company says about you — who you are connected to and how you are endorsed.

Each of these reputation systems is about instilling confidence in the social environment in which you engage. In time, reputation systems will extend to sites and services, as well. At *The Wall Street Journal's* D Conference last month, Bill Gates talked about a forthcoming reputation network that would let users report on the legitimacy of Web sites to combat identity theft and phishing. Such a reputation system could

Your reputation precedes you

be incorporated into browser or operating system technology, thereby using community-rated reputation as a proxy for security.

Reputation systems bring legitimacy and context to the interactions in social computing environments, and have allowed social software products and services to flourish. Imagine the possibilities if these services were perceived not as products themselves, but as component tools. Imagine if social networks — effectively search tools to identify personal and business relationships — were a part of business process software. That would be very powerful.

Likewise, imagine if reputation systems were not individual silos. Imagine if you did not start from scratch to build your reputation each time you joined a new community. Imagine if your reputation traveled with you, much as it does in the real world.

For that to happen, the technology industry needs to convene an initiative to create a reputation standard or protocol. There are whispers that such a movement is afoot, and hopefully consumers and businesses will wield their influence to demand such a standard and spur on the movement. A portable identity and reputation would enable more secure transactions, raise trust in interactive communities and reduce friction in e-commerce. When individuals can conduct business in a trusted environment, service-based social computing finally will become a reality.

Shipley is executive producer of The Demo Conferences, a biannual Network World-owned event that launches and showcases the newest emerging technology products and services. She can be reached at chris@demo.com.

Each of these reputation systems is about instilling confidence in the social environment in which you engage.



TELECOM CATALYST

Daniel Briere

The average medieval castle featured layers of defense. Multiple wall rings were constructed so that there was no single intrusion point. However, these walls could be rendered useless by that most unpredictable of enemies: the insider — a spy within the castle walls who helped the intruder gain access.

But what ultimately did in the castle era was the trebuchet, a sort of catapult on steroids which not only allowed the enemy to pound castle walls from a safe distance, but also to hurl flaming objects or diseased pigs over the walls. That ended the focus on building perimeters around castles as the major line of defense.

We're going through a similar security shift now in our networks, and I can't help but see the same evolution occurring. But while castles had decades to refine their security systems, most network growth has occurred within the last few years, and security technology has been scrambling to keep up.

Add VoIP to the network and you bring in an entirely new security problem. VoIP is more susceptible to denial-of-service (DoS) attacks than data applications because of its QoS requirements. Secure solutions are needed to protect against voice spam, phone number spoofs, theft of services and other threats as yet unknown. What's worse is that when you add voice components to the data network, they become susceptible to the same threats as the data network such as switch, router and software vulnerabilities.

Even more unnerving is the recent publicity regarding VoIP and 911 calling problems. A distributed DoS attack on a VoIP phone could prevent someone from dialing 911 in an emergency. That's a lawsuit you don't want to be on either end of.

Intrusion-prevention systems (IPS) not only address data threats and DoS attacks, but also can address VoIP vulnerabilities that have been discovered in Session Initiation Protocol and H.323 implementations. Because of their high throughput and low latencies,

Defending the castle

customers are increasingly putting IPSs at their network core to protect against worms, viruses, Trojans, DoS attacks, spyware and VoIP threats.

However, in the vein of "You can't be too rich or too thin," you can't be too secure or too wary. More proactive measures are needed to nip problems before they appear on the network. Security needs to be closer to the client.

Some ways to deal with this?

- Follow the movement toward internal security. The days of perimeter security being all you need are gone. Companies such as ConSentry Networks offer access enforcement gear specifically designed to control users and malware within enterprise LANs — in effect locking down security as close to the user as possible to create self-defending LANs. IPSs from companies such as TippingPoint/3Com can be placed on either internal or external points on the network.

- Track the VoIP Security Alliance. This group is working on predicting ways that hackers can cause problems with VoIP security. All VoIP vendors should participate in this effort. There's no room for proprietary one-sided solutions, and with more wireless and more VoIP coming into networks, we need to be further ahead of the curve, not behind in a "patch and run" fashion.

- Be aware of the movement toward reputation rating among networks. If you've got a reputation for sending a lot of spam — even if it's not your fault — then other networks will start shutting you off.

There's nothing like having a flaming pig hurled over the wall to get your attention — medieval kings and lords quickly changed their defensive plans and took the battle to the field. Today's environment is more akin to a hand-to-hand battle, with the good guys and bad guys intermixed, and you need new approaches to adequately defend against that.

Briere is CEO of TeleChoice, a market strategy consultancy for the telecom industry. He can be reached at telecomcatalyst@telechoice.com.

More proactive measures are needed to nip problems before they appear on the network. Security needs to be closer to the client.

Out with the old, in with the new data center

Six IT experts give pointers on how one fictitious company can solve its IT problems using new data center principles and technologies.

■ BY BETH SCHULTZ

Our problem scenario: The IT architecture at a major consumer goods manufacturer was a mess. Rapid growth over the last several years had forced a thinly spread corporate IT organization into reaction mode. What application and infrastructure guidelines the IT group had in place were often ignored by IT managers throughout the decentralized organization as they made decisions on the fly to suit the needs of their particular fiefdoms. In one year, the number of servers alone had doubled, with no consistency whatsoever on operating system selection. Different Windows versions ran on 60% of the servers, Linux on 25% and Unix on 15%. Some users were beginning to complain that applications were running way too slowly or crashing completely, while others expressed irritation about the growing number of passwords they had to remember. Here's a closer look at the IT environment:

● **Applications:** The company's most critical applications are legacy mainframe-based ones used by employees and customers for number crunching, as well as a handful of homegrown accounting applications that run on very old versions of Windows. These latter applications work well, so the priority has never been to update or port them to new versions of Windows. Besides these, the firm has a typical assortment of business applications, from ERP and CRM to e-mail and corporate instant messaging. Some IT managers had favored Java, others Microsoft's platform. Some developers have started playing around with Web services.

● **Server infrastructure:** The firm has a mish-mash of Sun and HP Unix servers and an assortment of Wintel servers at four data centers — one in New York, which is mirrored in Boston, and others in London and Sydney, Australia.

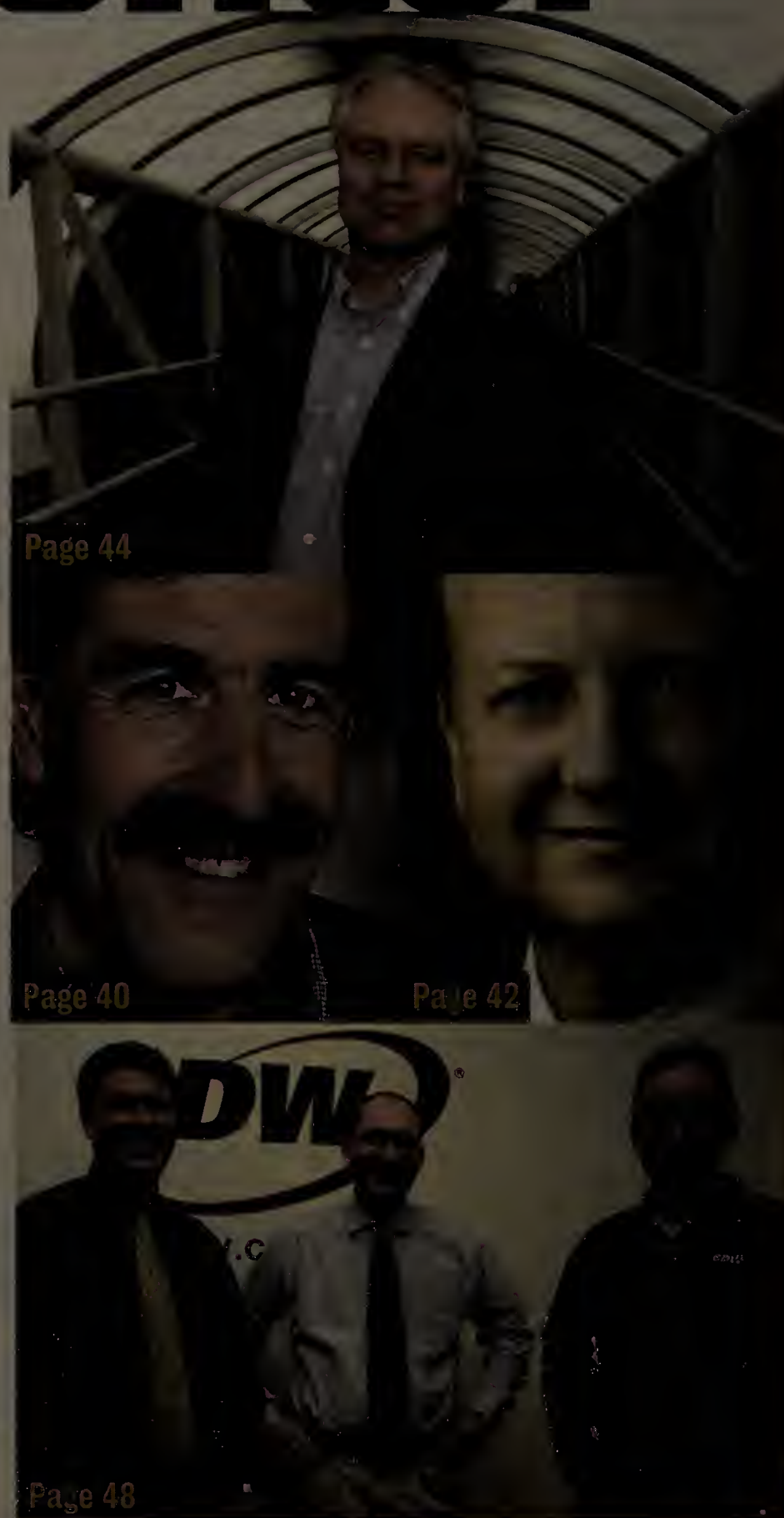
The number of servers has doubled to nearly 450, with roughly one-third of the

older Wintel servers reaching five years of age and in need of being refreshed. The remainder have not yet hit the corporate five-year depreciation threshold.

● **Network infrastructure:** The firm maintains a sluggish 1G bit/sec Ethernet backbone among its New York headquarters and seven major offices around the country; desktop links operate at 100M bit/sec. An IPSec VPN provides connectivity from smaller offices and international facilities. Wireless LANs are popping up at the offices, but have not been sanctioned by corporate IT.

● **Storage infrastructure:** Rapid growth has led to a hodgepodge of server-attached storage arrays of varying capacity, with a Fibre Channel storage-area network (SAN) in the New York data center.

Corporate IT knew it needed to turn IT into a services organization capable of enabling the business. It knew changes — big changes — were in order if it was to make that happen. But where to start?



Page 44

Page 40

Page 42

Page 48

From top left, Stephen Nunn of Accenture, Jeff Kaplan, Thinkstrategies, David Nolan, Forsythe Technology, and CDW's Jeremy Weiss, Tim Keating and Crawford Almer.

reconcilable differences

The storage folks need distance replication with the lowest latency, zero packet loss, guaranteed performance and security. Meanwhile, network managers must trim operational costs and still somehow prepare the network for the coming avalanche of web services, grid computing and other mission-critical applications. Thankfully, Ciena's Adaptive WAN™ supports all these applications and more in one solution designed for unprecedented scalability and zero downtime. Qualified by all the major storage players, Ciena's plug-and-play products lower costs by up to 80% while extending applications as far as you want, so you can afford to reconcile everyone's needs.

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SOLUTION 1:

Outsourcing looks good

THE EXPERT: Jeff Kaplan, managing director, Thinkstrategies

Obviously, this major consumer goods manufacturer's current ad hoc and decentralized IT approach has failed to support the company's corporate objectives adequately and has led to a severe deterioration in the reliability of its IT infrastructure and application services. As a result, IT leadership must take greater control of day-to-day IT operations end to end, and create a common vision for IT's overall role within the company.

IT leadership's first step must be to establish a stricter set of corporate IT priorities, policies and procedures for governing operations. This means that many of the company's IT decisions must be more directly based on corporate objectives. It also means that IT decisions must become more centralized to ensure better coordination and greater cost-savings.

Centralization might not sit well with IT staffers who previously have been allowed plenty of freedom to make their own decisions and to operate independently or with business units that had been making IT decisions autonomously. Given potential political ramifications, the move to a more centralized operating model should be mandated and fully supported by the company's senior management, starting with the CEO and CFO.

Centralization might not sit well with IT staffers who previously have been allowed plenty of freedom to make their own decisions and to operate independently or with business units that had been making IT decisions autonomously. Given potential political ramifications, the move to a more centralized operating model should be mandated and fully supported by the company's senior management, starting with the CEO and CFO.

Start with an audit

With its new authority, IT leadership must next initiate a thorough audit of IT and application service levels and assessment of current and future business requirements. To ensure an objective assessment, this audit should be either conducted by an independent firm or by an internal team of IT and business representatives that report its findings to senior management.

The audit should target specific performance problems that are hampering business success today and those that could adversely affect the company soon. It should determine which problems are directly related to technology issues vs. those that might be a result of poor IT management practices.

Given the escalating impact of the IT operating problems, the company needs to make important changes quickly. This audit process should take into account typical business cycles, but should not take more than 90 days.

Move on to outsourcing strategy

Given the company's limited resources, IT leadership then should develop an outsourcing strategy based on the specific priorities resulting from this audit and assessment. An outsourcing strategy should determine what roles outside solution providers will play in resolving the current problems, building an IT infrastructure and deploying applications that best satisfy the company's current business needs and meet its future corporate objectives. IT leadership needs to do this with the understanding that revamping the IT architecture and applications entirely on its own would not make good business sense given the rapidly expanding array of outsourcing or "out-tasking" alternatives.

While I don't recommend a wholesale transfer of the company's IT operations to an outsourcer because a majority of these deals fail, a growing number of managed services are available for addressing many of the company's problems. For instance, a managed VPN service could end sluggish performance on the 1G bit/sec Ethernet backbone, and a managed storage service could satisfy the company's storage-area network needs and provide off-site back-up facilities for disaster recovery and business continuity.

Consider specific managed services

As they've matured, managed services have become beneficial for large-scale companies that want to offload specific IT functions. Independent managed service providers as well as a growing variety of hardware and software vendors, telecom carriers and resellers offer these services.

The rapid evolution of managed services is being

matched by a resurgence of hosted software services. The success of Salesforce.com among small-to-midsize businesses has attracted attention from larger companies that are fed up with traditional CRM and salesforce automation software packages. Such on-demand services are available not only from major enterprise players such as Siebel Systems and Oracle, but also from other 'Net-native software service providers such as NetSuite. This consumer goods manufacturer might well be able to take advantage of a managed supply-chain management service.

Standardized platforms

Whether the company updates its hardware and software on its own or leverages third-party resources, standardizing the hardware and software platforms should be a priority.

This not only should permit the company to achieve greater interoperability across geographies, but also should increase system and application reliability, and reduce management and maintenance costs. Standardization

also would permit the consolidation of systems and platforms, which could result in greater performance levels. Standardization could enable the company to establish strategic sourcing agreements with key vendors, reducing procurement and support costs.

Finally, the company must remember that we are still in the midst of a buyer's market. In this environment, it has the luxury of selecting from a wide range of product and service alternatives. It also has the opportunity to negotiate favorable prices for these alternatives. The company should not make its choices based on price alone. But, it should be able to find good, economical solutions that address its short-term needs and long-term strategic objectives.

Kaplan can be reached at jkaplan@thinkstrategies.com.

The upshot: Corporate IT must take greater control of day-to-day operations, then consider outsourcing options for getting its infrastructure in new data center shape.

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SOLUTION 2:

The mindset matters

THE EXPERT: David Nolan, senior vice president of professional services and network solutions, Forsythe Technology



This organization decentralized its IT support for valid reasons — to respond quickly to acquisitions and other forms of growth, and presumably for better cost-justification and containment of IT spending as well as to align IT re-

sources with business unit needs.

However, its decentralized approach has had costly long-term results. Lack of standards, availability problems, and security and compliance challenges have led to decreased productivity, increased risk of business interruption, and — in all likelihood — unnecessary spending.

The first challenge in cases such as this is not choosing the right technology, but finding a more effective IT management mindset. As Einstein is reported to have said, “a problem cannot be solved by the thinking that created it.” Corporate IT groups can suffer as easily as siloed groups from an “incrementalist” mindset, especially when confronted with the enticements of emerging technologies.

Grouping the problems

The first step toward adopting a more effective mindset, and thus reducing cost and risk, is to examine how problems relate to one another, and what integrated set of solutions best addresses each group of issues. Based on many conversations with organizations like this fictitious manufacturer, we have found a range of IT issues that fall within six basic solution set areas.

1. IT portfolio management: The ability to tackle standardization issues of the sort described in the example requires knowing what you have. Inventory auditing and asset tracking provide that information. For any organization, but especially one with older, less reliable equipment, streamlined maintenance contract management can help minimize business interruption by assuring that equipment failures will be repaired within required timeframes. Together, these services — along with software license management — constitute overall IT portfolio management. The information they provide facilitates easier short- and long-term management, as well as better ROI measurement. This enables more strategic investments. Given the challenges facing this organization, one would have to

ask: Do the IT executives really know what they have? Do they really know how individual technology assets support specific business functions?

2. Server optimization: Technology and platform fashions aside, server, storage and network concerns come down to performance, availability, interoperability, manageability and budget. Recent proliferation, concerns about aging equipment and a “mish-mash” of technologies can be red flags that the time has come to assess the IT environment. However, effective server optimization methodology requires stepping back to ask questions such as: How do we ensure that we meet our service-level agreements to our customers? Can we find a solution that is better, faster, less expensive and more secure?

3. Storage optimization: The same is true for storage and networks. In examining the need for storage optimization, deciding whether virtual storage (or a storage-area network) is the appropriate technology solution is secondary to determining if and how the current state of storage is affecting business performance, recoverability and compliance-readiness. Critical questions include: Are our backups done properly? Can we really recover? Do we treat all data the same even though some data is far more valuable than other data? Do we know what data we have and where it is?

4. Network optimization: Network infrastructure is most often the gating factor to overall application performance and availability. And “new data center” technologies such as IP communications, optical and wireless offer tremendous promise. However, organizations can run into trouble putting the cart before the horse in terms of when and why they implement the new technologies. Network optimization requires asking questions such as: What connectivity standards do we need to support the performance requirements of our different business units and locations? Could network convergence help us cut our communication costs? Is our network ready to support our upcoming IP telephony initiative? Thinking about networks also must lead to a consideration of security — though security goes well beyond the network.

5. IT risk management: Compliance, security and business continuity/disaster recovery concerns together constitute IT risk management. The biggest mistake many companies make is to defer risk man-

agement initiatives until after they’ve “covered the basics” with regard to infrastructure. This is more risky and costly than an integrated approach. IT risk management is not a technology; it is the way a company builds and manages its enterprise and its processes to handle varied risk factors, from security threats and vulnerabilities to compliance audits to knowing the answers to questions such as: What would happen to our business operations, and bottom line, if the candle factory next door caught fire? What damage could a savvy, ill-intentioned hacker do?

6. Sourcing: To execute effectively based on the new mindset, our hypothetical organization also might want to look at sourcing options, asking the

questions: How do we find the resources to manage and execute all of the initiatives required to fix our major problems and turn IT into a true services organization capable of enabling the business? How do we

know our IT team is looking at the big picture? The first question here is not “Do we insource or outsource?” but “What resources will this require?”

Recognizing the interdependencies

The next step in adopting a better mindset is examining the ways in which the solution areas are interrelated — rather like the six sides of a Rubik’s cube. With the cube, there is a danger of scrutinizing one side head-on and not even seeing the others. Likewise, a change on any one side of the cube affects the others — such as a change in the storage infrastructure directly affects the server and network, and therefore security and recovery. Furthermore, getting one side perfectly solved is no guarantee that one or more of the others aren’t a mess. Finally, with each turn of the cube, a new “puzzle” is created that might be easier or harder to solve. In other words, even the best of intentions — or emerging technologies — when implemented without a strategic, overall plan, can make things worse.

Before making any investment in new data center technologies, this company needs to invest in a new mindset. After all, if you can’t find the time and money to do it right the first time, where are you going to find the resources to do it all over again?

Nolan oversees Forsythe’s networking and security businesses, as well as its consulting service practices. He can be reached at dnoian@forsythe.com.

The upshot: This company needs a new mindset before it can venture into new data center planning.



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SOLUTION 3:

Information transformation

THE EXPERT: Stephen Nunn, partner, Accenture



Today's global organizations are inherently complex. Nowhere is this more evident than in an organization's data center. The scene is often chaotic: data centers with hundreds (if not thousands) of servers, storage units, multiple data-

bases and dozens of operating systems — all needing to work together seamlessly to satisfy 24-7 user demands and business process application requirements. The problems faced by this major consumer goods manufacturer come as no surprise.

This organization needs to take a holistic view of its infrastructure and move to a flexible but secure utility-style computing model through an information transformation program. The company's objectives should be to gain control of its assets quickly, to improve its ability to support the business strategy, to reduce costs and self-fund longer-term IT-enabled improvements that will drive greater business performance. Here's a two-phased approach:

Phase 1 — IT consolidation program

This involves consolidating, standardizing and integrating a number of critical IT components including the data centers, networks, applications and workplace.

Doing this means starting with an infrastructure strategy and plan. The company can use such a plan as a blueprint for transforming the current environment to a utility-centric computing infrastructure through a number of structured and controlled releases.

One of the organization's key objectives should be moving to a smaller number of centralized and highly resilient data centers, with consolidation of most of its distributed servers within a smaller number of centralized servers. Typically we would expect a company such as this to reduce its overall server population by 30%.

Ideally the company also would undertake an application rationalization program. The program's intent would be to analyze the need for each application and to determine what additional initiatives can be undertaken.

The company should consider a Wintel rationalization program to categorize the servers and address consolidation and standardization by server category — for example, file rationalization or mail consolidation. The company also should consider virtualization software, such as that from VMware, the consolidation of business applications and the minimizing of remote servers. In addition, Unix-based servers should be categorized and analyzed for the type of applications being hosted and the development of a more consolidated environment. This would result in fewer platforms required for the same application portfolio.

For storage, this company should transition from its mixed environment to a tiered model that would enable it to provision, categorize and move data between tiers in a seamless manner. With tiered storage, the company would be able to maximize utilization and cost.

A pre-requisite to effective data center consolidation is a WAN with sufficient capacity and resiliency so the IT infrastructure can be centralized while effective network connectivity for user access is maintained. If the company had not already done so, it should move to MPLS for the WAN — achieving not only cost savings but also flexibility in terms of capacity.

The company also must review its telephony strategy and consider an IP convergence program. Initially, it would use the MPLS network to provide toll bypass between PBXs and then as appropriate replace the telephony infrastructure with IP-enabled PBXs.

As part of any IT consolidation program, the desktop should be evaluated to see if alternate methods of providing desktop services, such as thin clients, could be provisioned. Standardization of the desktop also would be of high priority with a program to migrate all Wintel-based applications onto Windows 2003.

Along with the technology initiatives, the company must model the underlying IT organization around the consolidated IT infrastructure. The organization

should be underpinned with robust IT Infrastructure Library-based operational processes and management tools that are able to monitor, alert and, wherever possible, implement remedial actions proactively, before incidents or problems.

Phase 2 — Infrastructure virtualization

This organization then would need to introduce a virtual layer into the newly consolidated and standardized environment. This layer — which would lie between the company's applications and its hardware — would capture a uniform snapshot of the IT environment and pool and connect IT resources that had been separated historically. On top of this virtualized platform, the organization could install software to help manage and provision hardware resources and to balance and consolidate workloads continuously. The organization would be able to:

- Move applications among various processing resources within its data centers to optimize performance across the enterprise.
- Allocate capacity and resources — such as utility-based data centers, mobile work

scenarios, workload management and IP (voice and data) services — dynamically and automatically.

- Reduce the complexity of managing hardware from multiple vendors and eliminate maintenance "downtime."

- Implement a simplified interface between IT resources and business processes.

- Measure provisioning time for new applications in seconds (not days) and response times for change requests in minutes.

A number of emerging security technologies will become increasingly critical in an infrastructure transformation program including identity management technology.

The result would be a flexible, highly secure, on-demand architecture that is aligned with the business.

Nunn can be reached at Stephen.nunn@accenture.com.

The upshot: This company needs to undergo a two-phase transformation that will take it from its current state of disarray to a flexible, on-demand-style new data center architecture.

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Top-Seeded Huskies to Meet Louisville
04:08 AM EST
The Washington Huskies got an early start on playing at another level. The Huskies flew to Albuquerque, N.M., the site of their regional semifinal against Louisville, on Monday to get accustomed to the city's 5,314-foot altitude. The team normally would have left campus a day later to prepare for Thursday's game, but coach Lorenzo Romar wanted his players to build up their endurance.

Arizona St. Shocks Notre Dame 70-61
04:12 AM EST
Arizona State's aggressive defense, timely shooting and gritty determination earned the Sun Devils that coveted trip home for the Tempe Regional.

AP Photo - GARY KAZANJIAN

NFL Committee Makes 19
03:53 AM EST

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■ WebsiteCreator	12 pages	12 pages
■ Software suite worth \$600	✓	✓
■ FrontPage extensions	✓	✓
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■ Active Server Pages	—	✓

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SOLUTION 4:

Layer by layer

THE EXPERTS: CDW's Jeremy Weiss, Tim Keating and Crawford Almer



New data center principles help organizations work smarter and strive for an environment where any IT asset can be managed securely from anywhere. With that in mind, CDW has compiled some sample recommendations to help this fictitious consumer goods company transform its IT operations into a strategic corporate asset.

Applications

- Move applications off desktop clients to server farms. Resulting benefits would include the ability to facilitate secure remote access; improve network manageability and reliability; ease upgrades and new software deployments; enhance support capabilities; and give IT managers more network control.
- Consider a Citrix environment, which would be suitable for accomplishing these objectives.

Storage

- Consolidate the Wintel environment onto high-performance eight- or 16-way Intel servers running virtualization software.
- Implement a Fibre Channel-based storage-area network in Boston to accept replication from the Fibre Channel-based SAN in New York. The Fibre Channel-based SANs also would act as back-end storage for the Intel servers running virtualization software. (While Fibre Channel-based SANs can be complex and expensive, performance benefits — especially compared with IP SANs — would outweigh costs.)
- Use terminal service software, such as Citrix MetaFrame, for on-demand access and single sign-on password capabilities. The centralized architecture would provide the greatest efficiency for management of resources.
- Deploy storage resource management software to clean up redundant and legacy data that the company no longer needs.
- Back up to disk using a Virtual Tape Library

device in concert with back-up software, then offload to tape. This would expedite backups.

- Implement an information life-cycle management strategy to prioritize data so that it is stored on the most appropriate media for saving money and for regulation compliance.

Bandwidth

- Use multiple carriers that can each offer a QoS-based service-level agreement (SLA). This would allow carrier redundancy among mirrored environments, providing alternate backbone routes in the event of carrier failure.
- Link each data center to the corporate WAN via a global MPLS architecture to improve capacity, speed and quality of voice and data transmissions.

Telephony/video-conferencing

- Deploy a Tier-1 backbone between sites and offer a SLA for packet loss, jitter and latency.
- Consolidate to a single PBX brand.
- Establish a common PBX architecture that includes WAN upgrades that feature lowest cost routing and MPLS.
- Implement a video bridge with distributed endpoints in the WAN.

Global recommendations

- Deploy facility management software such as Datatrax Forseer or APC InfraStruXure to integrate UPS, generators, power strips, A/C and other facility devices into one manageable GUI.
- Implement racks with vented front and rear

doors, and use three-phase power strips to help minimize costs of balancing loads within racks and on power circuits. These racks would allow for temperature and humidity monitoring.

- In the New York and Boston data centers
- Install a generator with an automatic transfer switch for long-term runtime.
- Install a UPS on any outlying distribution switches and at the desktops.
- Use online/double conversion UPS to condition power fully and ensure no interference with IP telephony or harmonics.
- Install an online/double conversion UPS to condition power from a utility or generator and to provide transitional uptime when a power outage hits.
- Install computer room A/C system in conjunction with a raised floor environment to address heat and humidity concerns.

In the Sydney and London data centers

- Use UPS at the desktop and remote switch levels.
- Use generators depending on office size.
- Use modular UPS for the server room and core switching/telephony equipment.
- Use raised flooring and A/C solution as in New York.

Security

- Create and enforce corporate security policies, including for wireless users and for exchanging corporate data with partners/suppliers.

The upshot: This company can effectively transform its IT operations into a strategic corporate asset by widely embracing new data center technologies and principles.

- Decide on a standard data center operating system to enable a central management option for patching and maintaining systems.

- Upgrade VPNs to current-generation service/security routers. This would allow for faster throughputs and high availability for incoming multicarrier lines.

- Deploy a high-throughput intrusion-prevention system to prevent bottlenecks in front of the server farm and malicious traffic from getting into CRM systems. Alternatively, add an intrusion-detection system blade on some switches to help maintain core speeds.

- On the Web server side, use an application-intelligent firewall to offer improved traffic reporting and prevent Web attacks.

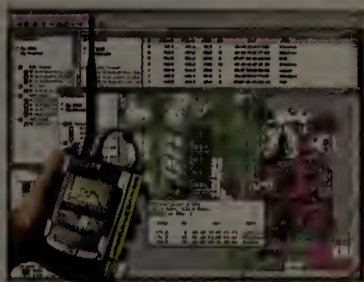
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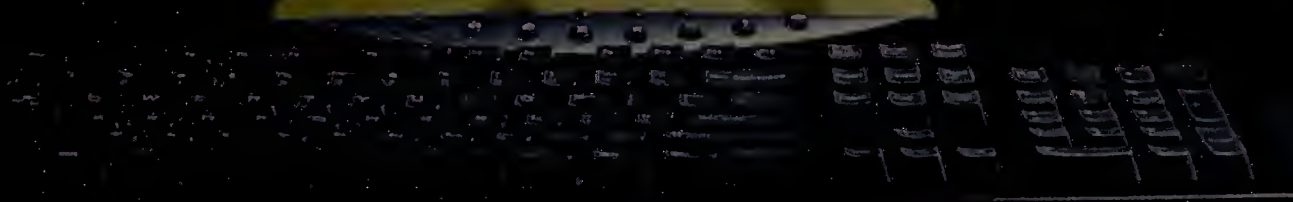


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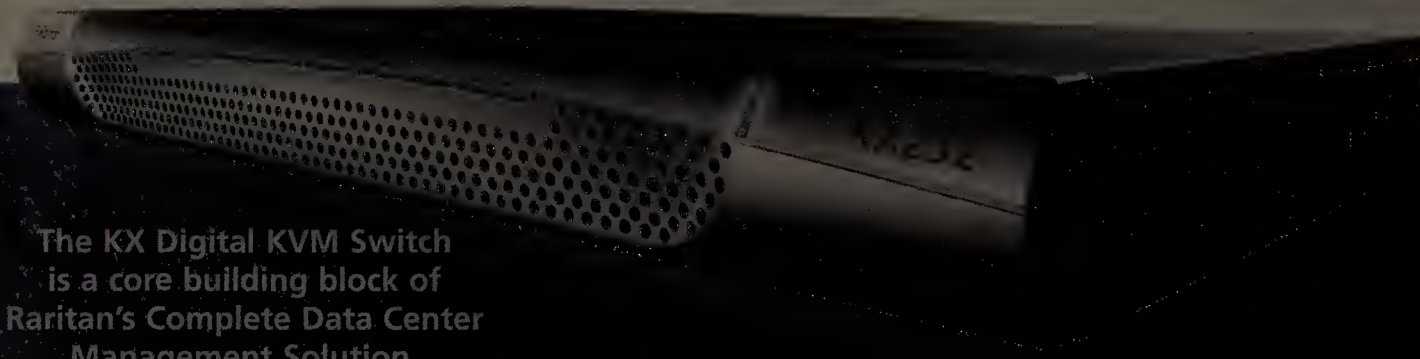
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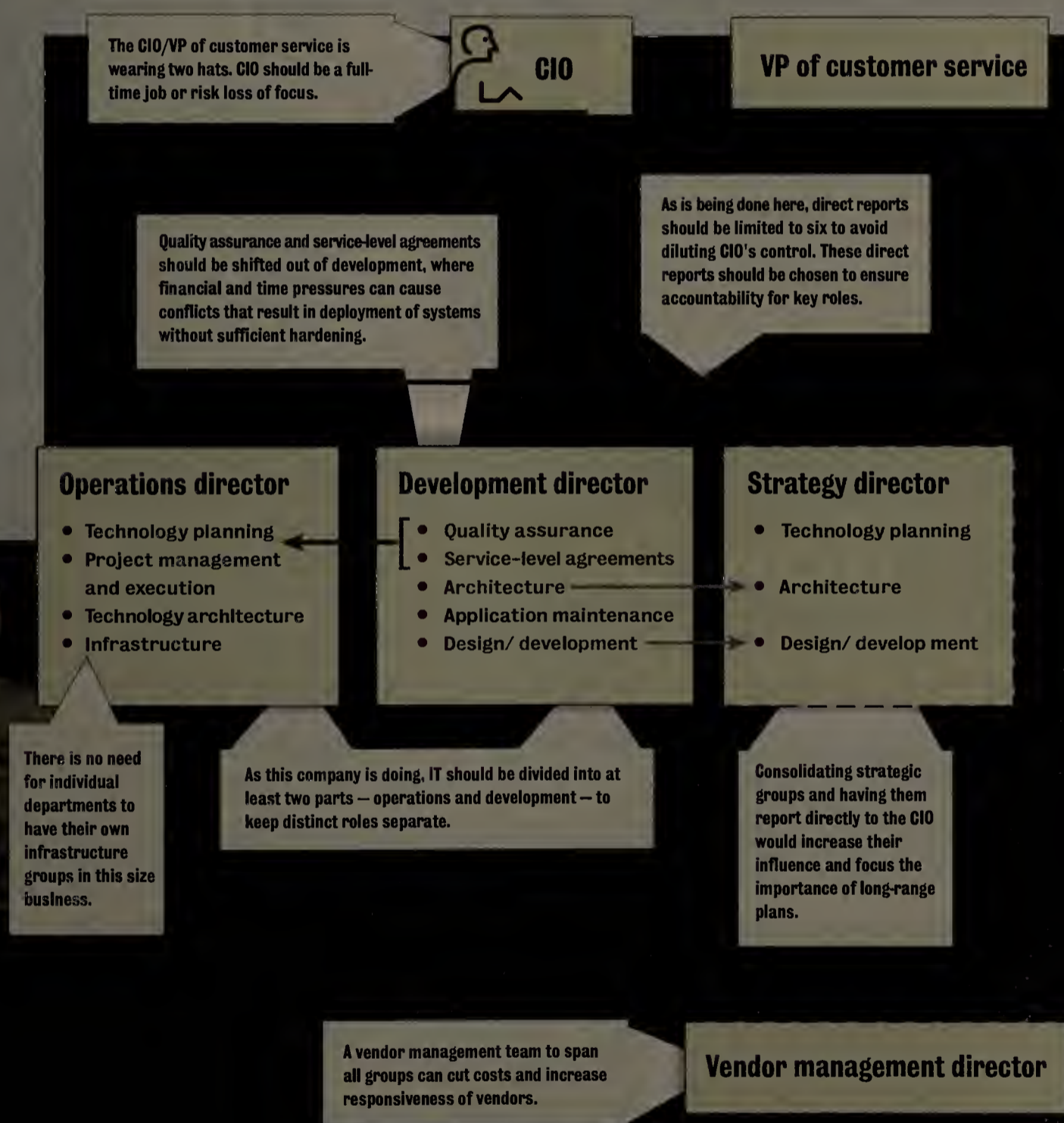
See what this company is doing right and how it can improve its staffing structure.

■ BY TIM GREENE

IT shops in midsize businesses need carefully thought out organizational hierarchies to function efficiently and effectively, but often they lack careful planning. CIOs may rely on personal influence and relationships to carry functions that ought to be built into the structure itself.

After interviewing more than 200 IT organizations, Marc Cecere of Forrester Research recommends how to deploy staff in a report "The Structure of IT: Midsize Shop Case Studies." This organizational chart of a real company he analyzed highlights good practices and points out possible weaknesses.

This IT department has about 450 members. Forrester defines midsize IT shops as 60 to 800 members, which Cecere acknowledges sounds arbitrary, but departments of that size have similar organizational patterns.





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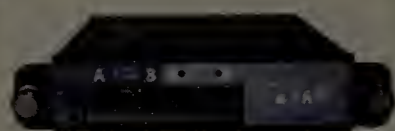
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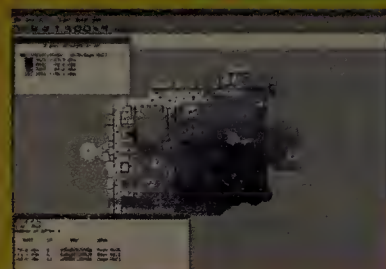
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1. General -
 2. Specific -
 3. Conclusion -
 4. Summary -
 5. References -
 6. Appendix -
 7. Index -
 8. Glossary -
 9. Notes -
 10. Footnotes -
 11. Bibliography -
 12. Table of Contents -
 13. Table of Figures -
 14. Table of Tables -
 15. Table of Equations -
 16. Table of Symbols -
 17. Table of Abbreviations -
 18. Table of Acronyms -
 19. Table of Initials -
 20. Table of Numbers -
 21. Table of Dates -
 22. Table of Times -
 23. Table of Distances -
 24. Table of Weights -
 25. Table of Volumes -
 26. Table of Areas -
 27. Table of Perimeters -
 28. Table of Angles -
 29. Table of Lengths -
 30. Table of Widths -
 31. Table of Heights -
 32. Table of Depths -
 33. Table of Thicknesses -
 34. Table of Diameters -
 35. Table of Radii -
 36. Table of Circumferences -
 37. Table of Surface Areas -
 38. Table of Volumes -
 39. Table of Masses -
 40. Table of Weights -
 41. Table of Forces -
 42. Table of Pressures -
 43. Table of Temperatures -
 44. Table of Energies -
 45. Table of Powers -
 46. Table of Currents -
 47. Table of Voltages -
 48. Table of Resistances -
 49. Table of Capacitances -
 50. Table of Inductances -
 51. Table of Frequencies -
 52. Table of Periods -
 53. Table of Wavelengths -
 54. Table of Amplitudes -
 55. Table of Intensities -
 56. Table of Fluxes -
 57. Table of Flux Densities -
 58. Table of Current Densities -
 59. Table of Charge Densities -
 60. Table of Mass Densities -
 61. Table of Energy Densities -
 62. Table of Power Densities -
 63. Table of Force Densities -
 64. Table of Pressure Densities -
 65. Table of Temperature Densities -
 66. Table of Energy Density -
 67. Table of Power Density -
 68. Table of Force Density -
 69. Table of Pressure Density -
 70. Table of Temperature Density -
 71. Table of Energy Density -
 72. Table of Power Density -
 73. Table of Force Density -
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 195. Table of Temperature Density -
 196. Table of Energy Density -
 197. Table of Power Density -
 198. Table of Force Density -
 199. Table of Pressure Density -
 200. Table of Temperature Density -
 201. Table of Energy Density -

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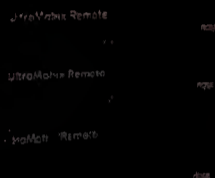
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- High quality video up to 1280 x 1024
- Secure encrypted operation with login and computer access control
- Scaling, scrolling, and auto-size features
- View real-time 4 computer connections using the quad-screen mode

The UltraMatrix Remote represents the next generation in KVM switches. It not only provides a comprehensive solution for remote server console access, this access can be local or from any workstation on your network over IP.

UltraMatrix™ E-series KVM SWITCH



■ PROFESSIONAL MULTI-USER KVM SWITCH 2 - 4 KVM STATIONS TO 1,000s OF COMPUTERS

- PC or multi-platform (PC/Unix, Sun, Apple, others)
- On-screen menu informs you of connection status between units in an expanded system
- Powerful, expandable, low cost
- No need to power down most servers to install
- Security features prevent unauthorized access
- Free lifetime upgrade of firmware
- Video resolution up to 1600 x 1280
- Available in several models
- Easy to expand

The UltraMatrix E-Series represents the latest in KVM matrix switch technology, at an affordable price. The E-Series allows you to connect up to 256 users to as many as 1,000 computers. The UltraMatrix E-Series is available in several sizes: 2x4, 2x8, 2x16, 4x4, 4x8, 4x16, 1x8, and 1x16 and either PC or multi-platform.

UltraConsole™ KVM SWITCH



■ SINGLE USER KVM SWITCH

- Supports PC, Sun, UNIX, Linux, USB, and serial devices
- Supports serial devices such as routers and emulates VT100/220 terminals
- Plug-in expansion cards allow the system to easily be expanded as the system grows
- An expanded system can connect up to 1,000 computers to a console user station
- Powerful and expandable, yet low cost
- Video resolution up to 1600 x 1280
- On-screen menu informs you of connection status between units in an expanded system
- Multi-lingual Menu (English, French, German, Spanish, Italian, Portuguese)

The UltraConsole represents the latest in KVM switching technology at affordable prices. The UltraConsole allows for a central user station to connect to four, eight, or sixteen computers per chassis, expandable to as many as 1,000 computers, servers, or serial devices.

CrystalView Pro™ EXTENDER OVER FIBER



■ DVI/VGA DIGITAL KVM EXTENDER OVER FIBER

- DVI and VGA video modes
 - PC and USB
 - PS/2 and USB keyboards and mouse
 - Full stereo audio (optional)
 - Serial (optional)
- Ethernet 10BaseT Network management (optional)
- Extend a KVM station from a CPU using fiber cable:
 - (MultiMode) 62.5-micron cable up to 650 ft
 - (MultiMode) 50-micron cable up to 1,300 ft
 - (SingleMode) 9-micron cable up to 33,000 ft (6 miles)
- Video resolution up to 1600 x 1200
- Flexible modular architecture

The CrystalView Pro fiber is the KVM extender of choice for businesses that need to extend and operate a computer, server, or KVM switch from a great distance.

The CrystalView Pro fiber makes this possible by the use of standard fiber optic cable. You can fully operate and control a computer or server from as far away as 33,000 feet using 9-micron fiber cable (Singlemode).

■ KVM RACK DRAWER WITH KVM SWITCH OPTION

The RackView offers the latest, most efficient way to organize and streamline your server rooms and multiple computers. The RackView is a rack mountable KVM drawer neatly fitted in a compact pull-out drawer. This easy-glide KVM drawer contains a high-resolution TFT/LCD monitor, a tactile keyboard, and a high-resolution touchpad or optical mouse.



**RackView
Fold-Forward**



**RackView
Fold-Back**



**RackView
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**RackView
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Editorial Index

3Com	19
A	
Advanced Micro Devices	23
AT&T	29
Axentra	34
C	
Cingular Wireless	29
Cisco	1, 6
Citrix	60
G	
Good Technology	29
H	
Habeas	62
HP	12, 23
I	
IBM	23
Intel	6
IronPort	19
J	
Juniper	12
M	
McAfee	6
MCI	14
Microsoft	6, 10, 25, 26

Advertiser Index

Advertiser	Page #	URL
1 & 1 Internet Inc.	46, 47	1AND1.com
American Power Conversion	17	http://promo.apc.com
Avocent	24	www.avocent.com/stayincontrol
Barracuda Networks	28	www.barracudanetworks.com
Berkeley Varitronics Systems	56	www.bvsystems.com
Ciena Corp.	39	ciena.com/storage
Computerwise	56	www.computerwise.com
Covaro Networks	54	www.covaro.com/intelligent
CrossTec Corp.	55	www.CrossTecCorp.com
Dell Inc.	63	www.dell.com/altiris4
DuPont	1, 22	teflon.com/cablingmaterials
EMC Corp.	8	www.EMC.com/backup
Foundry Networks	35	www.foundrynet.com/sx
Geeks on Call	53	geeksoncallfranchise.com
Hewlett Packard	11	hp.com/info/openview
Hewlett Packard	27	www.hp.tradeups.com/procurvepromo
*Hewlett Packard	41	www.hp.com/go/ML150mag8
Information Support Concepts	56	www.iscdfw.com
Intel Corp.	7	intel.com/go/xeon
Ipswitch Inc.	31	www.ipswitch.com
IT Watchdogs	56	ITWatchdogs.com
Microsoft Corp.	2, 3	microsoft.com/wssystem
Microsoft Corp.	15	microsoft.com/sql
MovinCool	56	www.movincool.com
MRV	45	mrvc.com/nww
Netfice Communications	4	www.netfice.com
NetScaler Inc.	13	www.netScaler.com/5x
NetSupport Inc.	54	www.netsupport-inc.com
Network Instruments LLC	52	www.networkinstruments.com/analyze
Network Instruments LLC	54	www.networkTAPs.com/visibility
Nokia Internet Communications	64	www.nokiaforbusiness.com/americas/smc
Packeteer Inc.	32	www.packeteer.com/four
Raritan Computer	50	Raritan.com/1428
Recurrent Technologies Inc.	56	www.recurrent.com
Rose Electronics	57	www.rose.com
Server Technology Inc.	52	www.servertech.com
SI Tech	56	www.sitech-buldriver.com
SunGard	43	www.availability.sungard.com
Xerox Corp.	18	xerox.com/office

N	
NEC	6
NetScaler	60
Q	
Quest Software	25
Qwest	9
R	
Reva Systems	59
S	
StorageTek	10
Sun	10
SupplyScope	25
U	
Unisys	25
V	
Verio	29
Verizon	9
X	
XO Communications	9
Y	
Yahoo	6

Network Life		
EMC Dantz Corp.	5	www.emcdantz.com
Geeks on Call	19	geeksoncallfranchise.com
Linksys	20	www.Linksys.com
Netgear	2	www.netgear.com/go/rangemax
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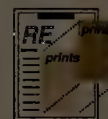
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Vendors tout vulnerability mgmt. wares

■ BY ELLEN MESSMER

Bolstering network vulnerability remediation and the ability to track down problems more quickly are the focus of a variety of products expected to be announced this week.

Vulnerability-management packages have gained attention lately as users struggle to patch systems, eliminate network weaknesses, find and fix a plethora of security configuration errors, and protect at-risk systems.

The announcements include:

- Citadel's Hercules 4.0 vulnerability-management product, an agent-based scanner that can integrate information collected by scanners from Internet Security Systems, eEye and Harris, to create an asset inventory.

- StillSecure's upgrade of its VAM security software to include an analytics module that provides forensics capabilities.

- Sourcefire's update of its 3D System vulnerability-detection and intrusion-prevention suite to feature better problem reporting.

Hercules 4.0 adds an audit and compliance-check feature that lets managers generate reports targeted at fulfilling regulatory requirements.

"Hercules now has templates to map to these regulations, without having to necessarily schedule remediation measures," says Carl Banzoff, CTO at Citadel.

In other changes, Citadel also is offering the Hercules server — the component for managing reporting and remediation — as a hardware appliance for managers preferring the ease of installation

associated with one in contrast to acquiring a server separately. In addition, vulnerability-management reporting now can be displayed in a graphic format.

The software agent that's part of Hercules 4.0 has added support for the Network Admission Control (NAC) protocol developed by Cisco and its partners to detect whether anti-virus updates are in place or Windows-based software has been updated for patches before allowing network access.

Banzoff says customers aren't yet using the NAC capability in the updated Hercules product.

Competitor StillSecure's upgrade to VAM includes the VAM vulnerability and asset management software, the SafeAccess endpoint scanner and the BorderGuard

intrusion-prevention system.

VAM now will include NAC support in the SafeAccess v3.5 software, expected to ship in early July. The SafeAccess scanner has its own method for checking anti-virus and patch updates, but support for the NAC protocol broadens the product's policy enforcement to Cisco, as well.

"We're a Cisco shop and could see using it in the future," says Chris Asaro, network engineer at New England School of Law, which uses StillSecure's SafeAccess to check staff and student computers.

The agentless SafeAccess scanner looks to find out if each computer has up to date anti-virus and Windows patches.

Asaro says the Boston law school last year began this security

procedure after students returned from summer vacation with their laptops infected with worms and viruses, which brought the campus network to a crawl.

Meanwhile, Sourcefire will bolster its Sourcefire 3D System by adding a 3D System scanner and policy-enforcement tool, called Real-Time Network Awareness (RNA). The feature will add support for third party tools, including the Nessus freeware scanner, the Shavlik Patch Management System and Cisco IDS event data.

According to Doug Herd, director of product marketing, the expansion of RNA means it can do a targeted active scan in addition to RNA's previous passive discovery of machines by watching traffic.

"By integrating it with Nessus, it's going to provide more definite information in the RNA vulnerability database," Herd says. That data can be shared with the Sourcefire IPS to block attack traffic targeted at high-risk servers or desktops, and well as remediating problems through the Shavlik Patch Management System.

Hercules 4.0 starts at \$19,750 to monitor 500 devices, and also is available under a monthly subscription for \$1,000 plus 75 cents per remediation change for configuration or patch update.

StillSecure's VAM starts at \$53 per IP, and an additional \$40 per user for SafeAccess.

Sourcefire's 3D System starts at \$4,000 and ranges up to \$189,000. ■

RFID

continued from page 1

Cisco's biggest enterprise customers are emphatic about their infrastructure requirements for RFID, says Mohsen Moazami, vice president of Cisco's Internet Business Solutions Group.

"They all say, 'If I'm going to install 10,000 RFID readers on my network, you have to ensure they are good citizens on the network,'" he says.

RFID pilots typically involve some tens of readers, installed in a few sites, scanning tags on a limited number of items. The readers radiate a signal, usually in the 900-MHz band, which activates a tag, causing it to reflect some of that received energy back, along with the unique ID number

embedded in the tag's tiny processor. That number is passed back to a local server, running RFID middleware and applications to aggregate and manage the data.

Nearly all of these deployments use proprietary protocols between the tags and the readers, and the readers and the server-based software. Equipment supporting EPCglobal's Generation 2 air interface protocol, and the IETF's proposed Simple Lightweight RFID Reader Protocol, is just now being certified.

Dave Husak, Reva's CTO, has a nightmare vision of the next phase of RFID. Imagine, he says, a Fortune 100 applications architect or CIO walking up to the network IT manager's desk and saying "I've just bought 500,000 RFID readers. I'd like them installed and operating."

"I can guarantee you that guy [the network IT manager] has not been at the table during the RFID discussions," Husak says.

What's needed, he says, is a layered architecture for RFID, embodied in an appliance-like controller that dovetails with the current enterprise network. Looking downstream to the readers, the controller coordinates the activities, monitors and manages the radio frequency environment, authenticates readers, and consolidates RFID data. Looking upstream, toward the enterprise network, the controller interfaces with services such as DHCP, presents data to higher level applications and databases, and links with enterprise security and

PROFILE: REVA SYSTEMS

Location: Chelmsford, Mass.

Founded: April 2004

Business: Server appliances for RFID network infrastructure; product announcement due this summer.

Management: CEO Ashley Stephenson, formerly with Xedia; CTO Dave Husak, formerly with C-Port; vice president of engineering Mike Grady, formerly with Argon.

Finances: \$6 million, raised in April 2004, from Charles River Ventures and North Bridge Venture Partners.

Competitors: Unclear, but Cisco and Symbol are among the likely ones.

Fun fact: The word "reva" means "new beginning" in an Indian dialect and "rain" in Hebrew; but it was chosen because "we just liked it," Husak says.

management capabilities.

The layering means application developers will be able to write RFID applications without taking into account underlying details about protocols, readers or tags. Today, if a reader breaks and is replaced, a developer has to rewrite part of the RFID application, says Ashley Stephenson, Reva CEO.

Reva and Cisco agree on the benefits of moving RFID functions into the network hardware. Cisco's Moazami ritually cited company policy about not commenting on unannounced products, but did say, "generically speaking, our approach is adding more functionality to our boxes." Currently, Cisco is working with a wide range of RFID tag, reader, and middleware vendors, as well as major systems integrators to provision RFID pilots that can be scaled eventually into large deployments, he says.

Those cooperative efforts are addressing a range of enterprise concerns, including security and authentication. It's likely those efforts will result in new Cisco software, and better integration of these various products. For example, how do you prevent someone with a handheld reader from walking in and scanning your tags for data? Remote management and upgrades for RFID readers is another pressing enterprise concern, Moazami says. Location services that can pinpoint a broken RFID reader will be essential in large-scale networks, he adds.

"So far, the market has been so focused on the reader and tag integration, that it hasn't paid much attention to what happens after these readers connect to the 'cloud [the enterprise network].'" Moazami says. "That will be a key determinant of successful RFID deployments." ■

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USPS735-730

Data leakage

continued from page 1

(see graphic, right).

Data-leakage prevention products typically work by being allowed access to databases to keep track of what an organization considers sensitive data and compare it with what goes out. But questions of false positives, missed leaks and its expense — \$100,000 is not an unusual price — have kept leakage detection in a niche reserved for a limited group of companies and government agencies.

Inside jobs

"It does stop e-mail with sensitive data," says Janet Behnke, IT manager at First Financial Credit Union in Los Angeles, which uses a gateway from Vidius (now called PortAuthority Technologies) at its Internet access point. The product is used to watch for sensitive information, including customer account numbers, balances and ATM card numbers.

Most credit union employees



PortAuthority CEO Pete Foley says there is tremendous opportunity to thwart unauthorized disclosure of sensitive information.

whose e-mail is blocked by PortAuthority — the average is 20 to 25 unauthorized e-mails per day — are sending out sensitive data by mistake, Behnke says. But there have been instances where the bank caught employees forwarding customer information to brokers in order to make money.

"They did it because they were trying to get commissions," Behnke says, adding that these employees were terminated. PortAuthority "saved us from a lot of exposure," she says.

This insider-theft problem is similar to that facing Bank of America and Wachovia, which in late May acknowledged massive

Plugging leaks

A sampling of products designed to keep sensitive information from leaving companies.

Company	Product	Price	Availability
Fidelis	DataSafe	starts at \$100,000	Now
Reconnex	iGuard 1300	starts at \$25,000	Now
Tablus	Content Alarm	starts at \$20,000	Now
PortAuthority Technologies (formerly Vidius)	PortAuthority (adds support for internal e-mail monitoring and blocking)	starts at \$20,000	Now
Vontu	Information Leak Prevention	starts at \$20,000	Now

data leaks involving stolen account data on tens of thousands of customers sold by bank employees.

Bank of America, which says it has deployed the Vontu information-leakage product, declined to say where the content monitoring helped in uncovering the problem, which involved use of e-mail as well as simply printing out customer information.

A Bank of America spokeswoman says the bank couldn't discuss the forensics while the investigation, which includes the Department of the Treasury as well as the Hackensack, N.J., police, continues.

While corporate users of information-leakage detection products say the offerings are effective in general, they acknowledge that the products aren't perfect.

PortAuthority registers false positives every day, Behnke says. "It's pretty low, maybe 1%, but it happens," she adds.

"We do get false alerts often," says Jeff Karafa, CFO and head of operations at the Community Bank of Dearborn, Mich., which has deployed leakage-prevention products from another vendor, Reconnex. Nevertheless, the Reconnex iGuard monitoring and blocking product has proven its worth since being installed in February, he says.

"We had an employee who innocently sent out a list of customers but forgot to encrypt the file," he says. "It caught that."

In a rarer instance, the bank caught an employee copying and sending out confidential information deliberately for more nefarious purposes. "This person was dismissed," he says.

Strict regulatory requirements in the banking industry for data privacy is driving its adoption, Karafa says.

Both he and Behnke say the data-leakage prevention products they use are a help in supplying evidence when it's needed

to confront suspicious behavior.

Battling for customers

Despite such praise, most of the network-based data-leakage prevention vendors don't count more than two dozen customers each, even though some of the companies have been around for a couple of years.

Fidelis, with its DataSafe product for monitoring e-mail, instant messaging and Web traffic, has four customers: the Washington, D.C., public school system; the city of Alexandria, Va.; the Pension Benefits Guaranty Association; and an Israeli telecom provider.

Fidelis founder and CEO Timothy Sullivan says he likes to call the \$100,000 DataSafe gateway an "extrusion prevention system," a phrase the company is copyrighting.

Most of the data-leakage prevention vendors — and some of the venture capital firms backing them — seem hopeful about the future despite a small customer base.

The newly renamed PortAuthority Technologies just gained \$13.4 million in funding from Greylock Partners, Sequoia Capital and Lexington Ventures with which to further develop its line and promote a new version of its software intended to monitor and block internal mail.

Although PortAuthority claims only 22 customers, new CEO Pete Foley is bullish. There's a "tremendous opportunity to address a significant enterprise challenge — unauthorized disclosure of sensitive information," he says.

However, some analysts say such vendors are having trouble breaking out of a niche. The expense of the products, plus competition from digital rights management companies, has kept network-based data leakage and prevention something of a luxury item.

"There's a bit of a shooting match between what we sometimes call 'egress information pro-

tection' and digital rights management, which involves enterprise use of encryption," says Trent Henry, an analyst at Burton Group. It's not clear whether one or the other will be widely adopted, but companies likely won't deploy both, he says.

However, with news about identity theft and data leaks making

the front page almost every week, the data-leakage prevention vendors say awareness of the problem is becoming more acute all the time.

"There's a sense of urgency driven by the compliance issue," says Tablus CTO Jim Nesbit.

CEO Jim Ponte adds that solving the insider threat problem "is not only a network issue but one that needs to be addressed at the desktop, as well."

To that end, Tablus this week announced that by August it will have a version of its Content Alarm product that combines network- and desktop-based monitoring. The desktop content-monitoring technology was gained through the acquisition of Indigo Security in February. This would make Tablus the only network-based data-leakage prevention vendor to include a desktop monitoring component. ■

Gaining speed, Citrix buys NetScaler

■ BY STACY COWLEY

Citrix last week said it would acquire application acceleration hardware vendor NetScaler for about \$300 million in cash and stock.

NetScaler makes application appliances that handle such tasks as load balancing, content caching and remote-access functionality. Its customers include Google, Amazon.com, Microsoft's MSN and Ticketmaster. NetScaler estimates that as many as 75% of Internet users pass through a NetScaler system each day.

The company also focuses on optimizing delivery of custom Web applications and ERP applications such as those from Siebel, SAP and Oracle. That market is where Citrix sees NetScaler's technology complementing its own flagship Presentation Server for managing and deploying enterprise applications, according to David Jones, Citrix's senior vice president of corporate development.


Citrix plans to let NetScaler continue operating fairly autonomously in San Jose, under the leadership of current NetScaler CEO B.V. Jagadeesh. NetScaler will be renamed the Citrix Application Networking Group, and Jagadeesh will report to Citrix CEO Mark Templeton. Citrix expects to retain most of NetScaler's 200 employees, Jones says.

Pending shareholder and regulatory approvals, Citrix expects the deal to close in the third quarter, after which it will immediately begin offering NetScaler's products through its own channel. NetScaler is privately held. Citrix valued the deal at \$300 million and said it will pay 45% of the purchase price in cash and the rest in shares of its stock.

Citrix has used several acquisitions to expand its product line, including its \$50 million purchase last year of SSL VPN vendor Net6 and its 2003 buyout of GoToMyPC maker Expertcity. Jones says Citrix has retooled its acquisition strategy following the "difficult" integration of its first major purchase, its 2001 takeover of portal software maker Sequoia Software. On its next major deal, Expertcity, Citrix decided to let the company continue running separately, a strategy that has paid off through a smoother transition.

Citrix competes with a variety of vendors, including Cisco, Microsoft, Sun, Aventail and Juniper.

Cowley is a correspondent with the IDG News Service.



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BackSpin Mark Gibbs



Death to manuals

Well, the flood of comments from the last two weeks of musing on Apple's software deficiencies continues unabated. Many of your comments are very interesting and insightful — thanks to all who replied and forgive me for not replying individually.

Some of the most pointed comments came from those of you who have noticed that the Macintosh operating system has, for some time, had problems when large numbers of fonts are loaded.

According to reader Russ LaPlante (using Mac OS X 10.3), "Our design group would like to keep 700 fonts available. ... When they run Suitcase X1 [a third-party font utility] to make these fonts available to the system ... the [Apple font manager subsystem] chokes on the fonts being introduced. I can see the [Apple font manager subsystem] getting 'hung' and using something like 5% CPU while it crawls through the task of loading up fonts. Apple needs to beef up this app, big time."

I looked around the 'Net to see whether there are other OS X font management problems. There are (see <http://tinyurl.com/chdmo>). It appears that OS X 10.4 (Tiger) might suffer from the same issues even when large numbers of fonts aren't involved!

Reader Cliff Sobchuk raised an interesting issue

over the desire many of us have "to just use the device" without referring to the manual. He asked, "did the user read the documentation and did the documentation indicate the use of libraries to handle large volumes of photos? If not, please rant as loud as you can to Apple's Customer Care to get them to rectify the situation."

What he is apparently suggesting is that I should RTFM (which, for you newbies out there, stands for "Read The Freakin' Manual"). The answer is, of course, no.

I don't think there's any reason why we should need a manual for 99% of modern software. Just consider how complex most recent personal productivity applications are. Manuals for these applications can't even begin to cover what they can do and if you can't just dive in and figure it out then to hell with it.

Moreover, physical manuals that have any depth can't be indexed adequately to make it possible to find things that answer questions the indexer hasn't thought of anyway.

The only really good manuals are more like books and where you often find these kinds of guides is in the graphics world. By way of example, the documentation for Jasc Software's Paint Shop Pro and ACD Systems' Canvas have the organization and style that makes them more than manuals.

Even then, wouldn't it be better to have the documentation built into the application?

To give the company its due, Microsoft has done a lot of work in this area by adding extensive and searchable HTML-based documentation in many of its products as well as extending the information with extra content acquired dynamically from its Web site.

Another good example of this style can be found in one of my favorite products: Infomersion's Excelsius. Not only is the documentation embedded, it also uses animated demos of the product's various components to show how they work. This is the way you get users over the learning hump and make them happy.

Future applications will have to meet far higher standards for educating and assisting users than they do today because the user environment is getting more complicated. Any company with a half-way serious application that doesn't keep pushing the limits of how well the program communicates with and helps its users might as well not bother. That means there are a lot of companies that need to get busy right now.

Good examples of bad manuals to backspin@gibbs.com. Maybe we'll put 'em on Gearblog (www.networkworld.com/weblogs/gearblog).



'Net Buzz News, insights, opinions and oddities

By Paul McNamara

The end of poetic license

Combining the clout of copyright law with a few lines of poetry in order to hammer spammers was always seen here as clever — as gimmicks go — despite the obvious challenge of mustering enough legal muscle to make the scheme work.

This unique approach — three lines of copyrighted haiku inserted into an e-mail header — was why a company called Habeas garnered wide press attention over the past couple of years in an anti-spam market that's more crammed with indistinguishable dreamers than an "American Idol" tryout.

Gimmicks usually go away, however, and such is the case here with the haiku. What's truly surprising, though, is that Habeas hasn't gone away with it ... and doesn't appear headed anywhere but up anytime soon. Last week the company announced a breakthrough deal with Microsoft that will see the biggest name in IT adopting Habeas' revamped SafeList technology to help it address the deluge of spam coursing through its Hotmail and MSN platforms.

Outstanding news for Habeas, but what happened to the haiku?

"Haiku is a goner, it's really gone," says Habeas spokesman Tim Cox. "We've purged it from the lexicon of Habeas."

Habeas purged it from its Web site, too, as nary a line of poetry nor mention of the word haiku can be found there today, a rather stunning turn for a company that made its name solely on the novelty of the approach. For those who don't recall, the idea behind the haiku was that poetry — unlike names, titles, slogans and phrases — can be protected by copyright law. Habeas sought to create a service whereby licensed senders would use an e-mail header that included the company's haiku.

ISPs could be confident that e-mail carrying it was legitimate, and anyone using it without permission could be dragged into court.

It made enough sense to get the company funded and attract lots of curious reporters.

Trouble is the system just didn't work as envisioned.

"The haiku wasn't really adding any value because the company is not really going to be in the business of pursuing miscreant senders who have transgressed the copyright," Cox says. "It was easily forged and people did forge it. At one point in time, it became an indicator that an e-mail probably was spam."

While a handful of test cases were filed, the problem of enforcement bandwidth did materialize.

"The company really doesn't have the wherewithal to go after these spammers," Cox says. "Let Microsoft, the ISPs and the Federal Trade Commission do that. They've got the lawyers and the budget."

New management at the top of the company decided to quietly abandon the copyright-based strategy in favor of developing a broader range of products and services designed to help legitimate senders and receivers.

"The goal now is first to be known as the predominant e-mail accreditation agency and secondly to become known as an independent mediator between senders and receivers," Cox says.

The SafeList technology being adopted by Microsoft heads the strategy.

"To get on the SafeList, you, the sender, need to jump through a ton of hoops. You need to be certified by Habeas as an accredited sender," Cox says. "They look very carefully at your reputation on the Internet and your sending practices. They look to see how you've got your server set up in terms of open relays. They check that you're implementing authentication properly on out-board stuff. At the end of the whole deal you get the Habeas stamp on your forehead: You're a good sender."

And you won't have to recite any poetry to prove it.

Questions and comments — in haiku, if you prefer — should be addressed to buzz@nww.com.

THIS CHANGES EVERYTHING.

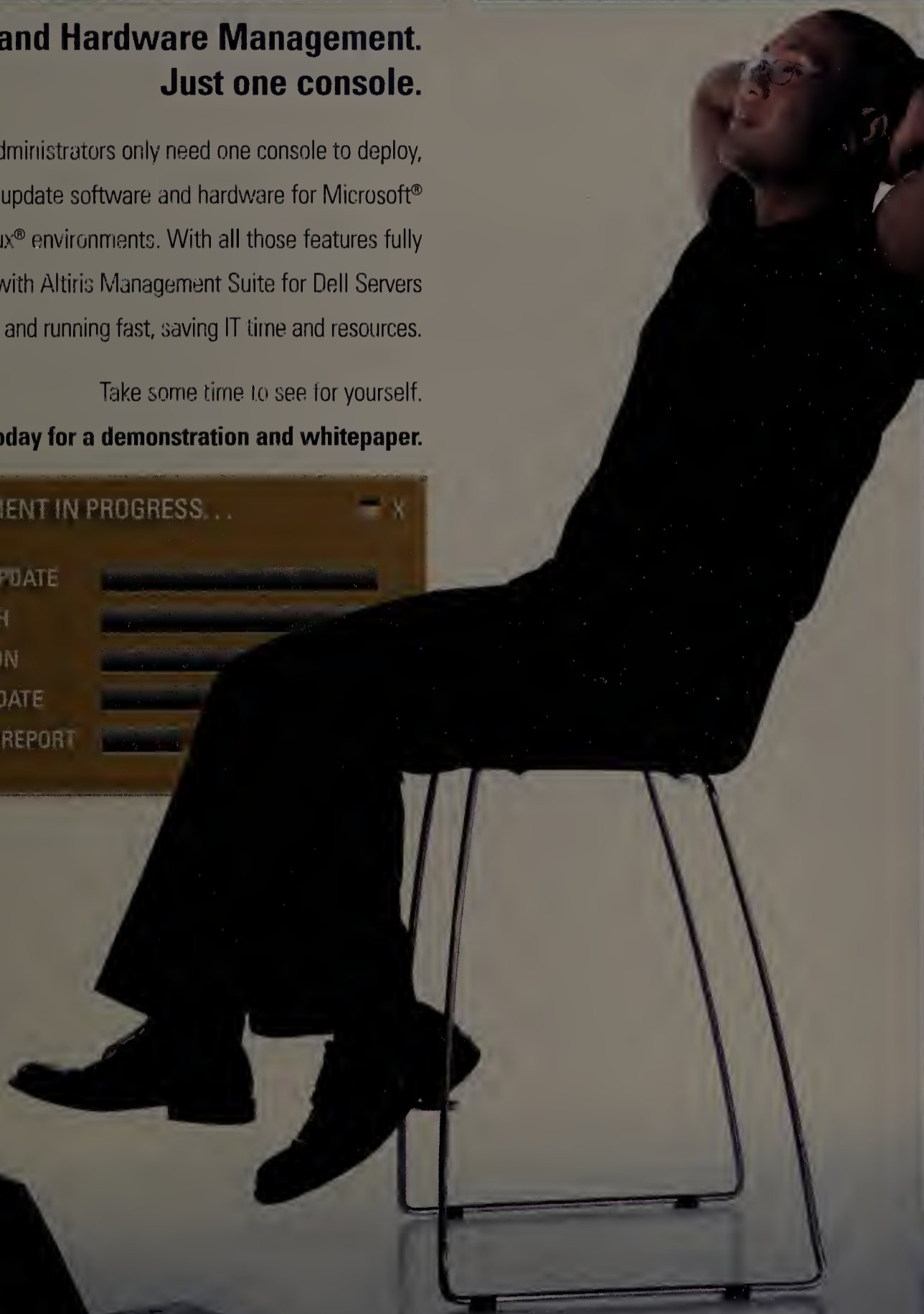
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